

Craig J. Stickelmaier

PROFESSIONAL HISTORY:

Risk Management Professionals, Inc., Irvine, CA

Project Engineer, 2018-2022

Senior Engineer, 2022-Present

EDUCATION:

Bachelor of Science, Chemical Engineering

University of California, Santa Barbara

CERTIFICATIONS:

Engineer-In-Training (EIT) – California

PROFESSIONAL AFFILIATIONS:

*American Institute of Chemical Engineers
(AIChE)*

Mr. Stickelmaier

graduated from the
University of
California, Santa



Barbara with a Bachelor of Science degree in Chemical Engineering with an emphasis in catalysis and biofuels research. Currently, Mr. Stickelmaier provides technical support as a Project Engineer for Risk Management Professionals.

In addition to his work with clients, Mr. Stickelmaier has been involved in educational outreach and has strived to improve the

product lines provided by Risk Management Professionals. Mr. Stickelmaier has participated in the Global Congress on Process Safety (GCPS) at the 2019 and 2023 AIChE Spring Meetings, where he presented posters on “Using HAZOP/LOPA to Create an Effective Mechanical Integrity Program,” “Putting Compressor Failures into Perspective for the PHA” and “Tips to Streamline Your PHA (and Your Investment).”

Since joining Risk Management Professionals, Mr. Stickelmaier has been immersed in multiple aspects of the United States Environmental Protection Agency (US EPA) Risk Management Plan (RMP), Occupational Safety and Health Administration (OSHA) Process Safety Management (PSM) Program, and California Accidental Release Prevention (CalARP) Program development. Mr. Stickelmaier has been involved with:

- Process Hazard Analyses (PHAs) and Hazard Reviews (HRs), including Hazard & Operability (HAZOP) facilitation support
- Layer of Protection Analysis (LOPA) facilitation support
- Hazard Identification (HAZID) facilitation support
- What-If and Checklist Analyses
- Risk Management Plans (RMP) / Process Safety Management (PSM) Programs
- California Accidental Release Prevention (CalARP) Program
- Nevada Division of Environmental Protection (NDEP) Chemical Accident Prevention Program (CAPP)

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- Toxic and Flammable Gas and Liquid Dispersion Modeling
- Regulatory Compliance Auditing and Support
- Piping and Instrumentation Diagram (P&ID) Development and Field Verification
- Hazardous Materials Inventory Calculations

While Mr. Stickelmaier has experience in diverse product lines, all completed projects have used high-end qualitative and/or quantitative risk analysis techniques for decision-making. He has been involved in a variety of engineering projects across several industries, including the following fields:

- Petroleum and Renewable Fuels (Production, Refining, Storage)
- Gas Processing/Transportation/Storage
- Chemical Manufacturing
- Water Treatment and Distribution Systems
- Ammonia Refrigeration Systems

PROJECT EXPERIENCE

Process Hazard Analyses (PHA) Facilitation

Mr. Stickelmaier has facilitated and been the technical scribe for PHAs and Hazard Reviews (HRs) using the HAZID, HAZOP, LOPA, and What-If/Checklist methodologies. The following outlines a partial list of units and projects that Mr. Stickelmaier has provided facilitation and technical scribe support for:

- **Downstream Oil and Gas:** HF Alkylation, Catalytic Reforming, Hydrocracking/Hydrotreating (incl. Benzene Saturation), Gas Plant, Renewable Fuels Conversions, Sour Water & Ammonia Stripping, Crude & Vacuum Units, Tail Gas Treating (ThioSolv Unit), Selective Catalytic Reduction (SCR), Fired Boilers, Fuel Gas System, LPG Storage, Tank Farm & Loading Rack
- **Midstream Oil and Gas:** Natural Gas Compressor Stations
- **Upstream Oil and Gas:** Offshore Platform
- **Municipal Water Treatment:** Chlorine and Ammonia Water Treatment
- **Ammonia:** Ammonia Refrigeration and SCR (anhydrous and aqueous)
- **Chemical Manufacturing:** Polymer Sulfonation, Peptide Synthesis, Metal Etching

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- **Capital Projects:**

- **Biofuels Production Plant - Midwest, USA** – Provided HAZID facilitation support for the feasibility design of a grassroots biofuels production facility, which included careful review of a number of different processes such as hydrodeoxygenation (HDO), acid condensation, fractionation, caustic treating, organics/light ends recovery, and hydrotreating.
- **Renewable Fuels Conversion Project - Refinery, Martinez, CA** – Provided extensive HAZOP/LOPA facilitation support throughout the initial and final design phases. Specific units included the Delayed Coker, Gas Plant, Tank Farm, Feed Pretreatment and Rail Terminal areas.
- **Sustainable Aviation Fuel (SAF) Conversion Project – Renewable Fuels Refinery, Dickinson, ND** – Provided conceptual design HAZID facilitation support to convert the renewable diesel refinery's existing process to maximize SAF production.
- **Tank Farm / Renewable Fuels Conversion Project - Refinery, Dickinson, ND** – Provided HAZOP/LOPA facilitation support for the Tank Farm to accommodate both the 5-year PHA of the as-built process, as well as separate design PHAs associated with the refinery's conversion to renewable fuels production. Design PHA scope included the Tank Farm and Utilities Units.
- **Bed Fluidization with Temporary Compressor Project - Biofuels Plant, Reno, NV**
- **Crude Heat Integration Project - Refinery, Salt Lake City, UT** – Supported the design HAZOP/LOPA for a revamp project intending to maintain unit throughput with a blend of crude feeds while improving crude preheat train heat recovery and final preheat temperature and maximizing middle distillate recovery.
- **Renewable Feedstock Unloading, Storage and Pretreatment Project - Refinery, Dickinson, ND** – Provided HAZID and formal PHA sessions for the design of rail car offloading, storage, and pretreatment areas.
- **Tier 3 Upgrade Project - Refinery, Gallup, NM** – Provided HAZOP/LOPA support for design modifications related to the EPA's Tier 3 sulfur standards. Review included the Isomerization, Naphtha Hydrotreater, Amine Treating, Fluid Catalytic Cracking, and ASO Handling Units.

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Compliance Audits

Mr. Stickelmaier has completed many CalARP/RMP/PSM Compliance Audits, which include facility walkdowns and familiarization with the regulated covered process, reviewing Prevention Program documentation to identify deficiencies that would result in citations from the applicable regulatory agencies, developing a line item report that lists the specific deficiencies, and meeting with facility personnel in order to identify any other needs or services they may require. Below is a partial list of projects for which Mr. Stickelmaier has performed Compliance Audits:

- *Oil & Gas Plant - Gas Processing Unit, Signal Hill, CA*
- *Sulfuric Acid Plant - Copper Smelter, Claypool, AZ*
- *Propane Storage and Loading Terminal - Atwater, CA*
- *Propane Storage and Loading Terminal - Barstow, CA*
- *Oil & Gas Plant - Gas Processing Unit, Lompoc, CA*
- *Chlorine Injection System - Water Treatment Plant, Fairfield, CA*
- *Anhydrous Ammonia System - Refrigeration Facility, Selma, CA*
- *Anhydrous Ammonia System - Refrigeration Facility, Commerce, CA*

CalARP/RMP/PSM Program Development and Updates

Mr. Stickelmaier has been deeply involved with the development of many California Accidental Release Prevention (CalARP) Programs, RMP, and PSM Programs for a wide spectrum of industries and processes. As part of these efforts, he has conducted Offsite Consequence Analyses (OCA), external events analyses, dispersion modeling, recommendations review, program development, United States Environmental Protection Agency (US EPA) and Administering Agency (AA) submittals, and review. Mr. Stickelmaier has been working closely with regulators to help his clients stay ahead of regulatory requirement amendments. Below is a partial list of projects for which Mr. Stickelmaier has provided CalARP/RMP/PSM Program Development/Update support:

- *Polymer Sulfonation Process - Chemical Manufacturing Plant, Philadelphia, PA – Developed a five-year update of the Hazard Assessment/Offsite Consequence Analysis for a RMP/PSM Program 3 facility regulated for their onsite oleum storage and handling.*
- *Chlorine Injection System - Water Treatment Plant, Sacramento, CA – Developed the Hazard Assessment/Offsite Consequence Analysis for a CalARP/RMP/PSM Program 3 facility regulated for their chlorine injection process.*

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- *Gas Plant - Lyons/McPherson, KS* – RMP Program assistance including development of Hazard Assessment/Offsite Consequence Analyses and EPA RMP Submittals for multiple gas plant sites in Kansas.
- *Aerosol Recycling and Propane Storage Facility - Beatty, NV* – Provided Hazard Assessment/Offsite Consequence Analysis development to support compliance with the Nevada Division of Environmental Protection (NDEP) Chemical Accident Prevention Program (CAPP). Support included multiple updates to the Hazard Assessment and close correspondence with the NDEP Regulator so as to ensure commissioning of the client's facility in a timely manner.

CLIENT LIST

The following is a partial list of clients that Mr. Stickelmaier has managed and/or provided technical support:

Oil and Gas

- Marathon Petroleum Company
- HF Sinclair
- World Energy
- Worley
- Burns & McDonnell
- Fluor
- Fulcrum Sierra Biofuels
- California Natural Resources Group
- DCOR
- Williams Midstream
- Consumers Energy Company
- AmeriGas Propane
- Signal Hill Petroleum
- Beta Offshore

Manufacturing/Chemical Processing

- Esterline Corporation
- Purolite
- Capstan California
- PolyPeptide Group
- GKN Aerospace
- Freeport-McMoRan