

TERESA A. MARION

PROFESSIONAL HISTORY:

Risk Management Professionals, Inc.;
Media, Pennsylvania; Northeast
Engineering Manager;

EDUCATION:

*Chemical Engineering, Bachelor of
Science, University of California,
Riverside, California;*

*Masters of Business Administration,
Walden University;*

CERTIFICATION:

- *Incident Command System IS-100*
- *Incident Command System IS-200*
- *National Incident Management System (NIMS) IS-700*
- *National Response Plan (NRP) IS-800*

PROFESSIONAL AFFILIATIONS:

- *Refrigerating Engineers and
Technicians Association (RETA)*

Ms. Teresa A. Marion provides high level project management and extensive technical support to a variety of Project Teams on a wide range of projects. Her experience and ability to plan and coordinate projects makes her a crucial part of the Risk Management Professionals Team and has allowed her to expand operations as head of our East Coast Business Unit. Ms. Marion's experience includes facilitation of Qualitative Hazards Analyses using Process Hazard Analysis (PHA) techniques while integrating Layer of Protection Analysis (LOPA), as necessary, for a variety of facilities, development of California Accidental Release Prevention (CalARP), Risk Management Plan (RMP), and Process Safety Management (PSM) Programs for hazardous chemical facilities, Emergency Response/Operations Plans and Incident Response Field Guidebooks for municipalities and water utilities, Hazard Mitigation Plans for special districts and municipalities, and Hazardous Material Inventories/Business



Emergency Plans (HMI/BEP) for various facilities.

In addition to these projects Ms. Marion has also assisted in development of Pre-Disaster Mitigation (PDM) Grant Programs, and has provided significant support to completion of Spill Prevention, Control, and Countermeasures (SPCC), Sewer System Maintenance Program (SSMP) Compliance Assessments and development of SSMP Development Plans. Due to her in depth knowledge of regulatory programs Ms. Marion has provided presentations on numerous topics with regulatory agencies, designed to provide public information.

Ms. Marion's experience and knowledge of planning and coordination of large, involved projects, allows her to provide crucial project management support and assistance on a wide spectrum of projects. She has extensive experience establishing and maintaining schedules, closely monitoring project progress and budgets, and implementing the formal quality control and security program.

PROJECT EXPERIENCE:

Ms. Marion has been involved in the following projects:

Qualitative Hazards Analyses using Process Hazard Analysis (PHA) techniques

Ms. Marion has conducted Qualitative Hazard Analyses using Process Hazard Analysis (PHA) techniques, which includes facility walkdown and familiarization with process being reviewed, familiarization with Piping and Instrumentation Diagrams (P&ID's), and understanding of Process Hazard Analysis methodologies. Ms. Marion has conducted these analyses using FEMA approved Process Hazard Analysis techniques, including Hazard and Operability (HAZOP), What-If, and What-If/Checklist methodologies. Ms. Marion has facilitated and assisted in conducting complex HAZOP studies for various chemical processes. The HAZOP studies completed included a detailed review of the hazards associated with implementing design modifications, as well as the adequacy of existing safeguards (i.e., alarms, training, etc.). Ms. Marion has also completed SIS/SIL ranking and is fully versed in Layers of Protection Analysis (LOPA), to further the safety of chemical processes. As part of the HAZOP process, Ms. Marion has applied LOPA to further facilitate the understanding of safety features and, as necessary, apply SIL allocations to SIS features. Ms. Marion has facilitated studies at all levels of design from Front End Engineering Design (FEED) to After Front End Engineering Design (AFD). The What-if/Checklist technique was used to evaluate specific human factors and allows for external events and siting issues to be identified and considered. In addition, Ms. Marion has worked with facilities conducting Management of Change (MOC) to ensure that the PHA's were conducted as required by regulatory requirements and assisted facilities in field verification/tracing of Piping and Instrumentation Diagrams (P&IDs). Below is a partial list of PHA's Ms. Marion has completed:

- Diesel Hydrotreaters
- Tank Farms and Interconnecting Systems
- Hydrogen Distribution
- Pressure Swing Absorption Units
- Silane Refrigeration
- PolySilicon Refrigeration
- Sulfur Loading Racks
- Pipeline Communications
- Selexol Unit
- Amine Regeneration
- Storm Water Treatment System
- Sour Water Systems
- Sulfur Complex
- Process Water Treatment Complex
- Offsites and Utilities
- Benzene Saturation Unit
- Potable Water Treatment Centers
- Ammonia Refrigeration Units
- LPG Storage and Truck Loading
- Ammonia Conversion Systems

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- Flare System
- Fluidized Bed Reactors
- Flare Vapor Recovery
- Hydrocracker Unit
- Hydrogen Plant
- Cooling Water Tower
- Naphtha Hydrotreater
- Aqueous Ammonia Skids for SCR
- Fractionator
- Steam/Condensate Distribution

Some specific petrochemical and chemical facilities that Ms. Marion has provided HAZOP support include, but are not limited to:

- Tesoro – Los Angeles Refinery
- REC Silicon
- Conoco Phillips – Lube Oil Station
- Total Petrochemicals/Fluor
- Inergy Midstream, LLC
- Paramount Petroleum
- World GTL/Petrotrin: Gas to Liquids
- Valero – Benicia Facility
- Gasco - Abu Dabi Shah Gas Plant/Conco Phillips/Fluor

CalARP/RMP/PSM Program Development and Revalidation

Ms. Marion has assisted in the development and implementation of California Accidental Release Prevention (CalARP), Risk Management Plans (RMP), and Process Safety Management (PSM) Programs for a wide spectrum of facilities. As part of these efforts, she has developed comprehensive program elements, including: Process Safety Information, Process Hazard Analysis, Operating Procedures, Mechanical Integrity, Management of Change, Pre Startup Safety Review, Training, Compliance Audit, Incident Investigation, Employee Participation, Contractor Review, Hot Work Permits, Trade Secrets, and Emergency Planning and Response. In development and implementation of these programs Ms. Marion has conducted P&ID reviews and updates, Offsite Consequence Analysis (OCA), external events analysis, dispersion modeling applications, recommendations review, program development, US EPA and Administering Agency submittals, and review. In addition, she has assisted facilities in writing operating procedures, implementing preventative maintenance programs, and training facility personnel in the programs.

As part of the CalARP/RMP/PSM Programs, Ms. Marion has also assisted in Incident Investigations, implementing Management of Change, provided EPA and OSHA Audit Assistance, and assisted facilities in correcting Administering Agencies Notice of Violations. The following is a partial list of projects in which Ms. Marion managed and/or participated:

- Artesia Ice
- City of Fountain Valley Public Works

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- City of Brawley Water Treatment Plant
- City of Calexico Water Treatment Plant
- Bumble Bee
- Cott Beverage
- Camarillo Sanitary District
- City of El Centro Water Treatment Plant
- Alcoa Fastening Systems
- Airgas Dry Ice
- Matheson TriGas
- Metropolitan Water District
- Glacier Cold Storage
- County of Los Angeles Department of Public Works
- Growmore
- Sun World Produce
- Reid Metal Finishing
- Quaker City Plating
- City of Martinez Water Treatment Plant
- Harbor Cogeneration Company
- Beo Mag Plating
- Frontier Cooling
- Systems Services of America
- Ocean Mist Farms
- Sun Pacific

Compliance Audits and Administering Agency/EPA/OSHA Inspections

Ms. Marion's in-depth knowledge of the regulated processes as well as industry application of the regulations and requirements has allowed her to complete extensive CalARP/RMP/PSM Compliance Audits. As part of the Compliance Audit, Ms. Marion has completed facility walkdowns, reviews of Prevention Program documentation in order to identify deficiencies that would result in citations from the applicable regulatory agencies, developed a line item report that lists the specific deficiencies, and coordinated meetings with facility personnel in order to ensure effective program implementation and identify any other needs or services they may be required. If deficiencies were found during the Compliance Audits, Ms. Marion worked with the facilities to ensure responsible parties and target completion dates were assigned.

In addition, Ms. Marion has assisted facilities with Administering Agencies, EPA and OSHA Inspections. As part of these efforts she worked with the facility to meet the requirements set forth by the Inspector and assist in identifying how the facility is meeting regulatory compliance for the program elements. She also assisted in correcting any deficiencies found during the inspections.

Emergency Response Plan and Incident Response Field Guide Development

As part of the Security Vulnerability Assessment, the US EPA requires water facilities to update their Emergency Response Plans to account for the findings of the SVA. Ms. Marion has assisted municipalities and City Water Divisions in implementation of critical emergency response recommendations associated with security issues

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and hazards precipitating from malevolent acts into their Emergency Response Plan. In addition, the Emergency Response Plans were developed in compliance with SEMS and NIMS specifications to allow for a smooth interface with the operations of the municipal emergency response agency. This ensures effective response to an emergency and provides the ability to operate under Unified Command.

In addition to Emergency Response Plans, Ms. Marion also helped in the development of Incident Response Field Guides. The Incident Response Field Guides were developed for different tiers of personnel and designed to assist in quick assessment, action, and documentation during an emergency incident.

Spill Prevention, Control, and Countermeasures (SPCC)

The Spill Prevention, Control, and Countermeasures (SPCC) planning documents are designed to mitigate hazardous material releases into navigable waters. As part of Ms. Marion's experience she has provided facility support in updating and development of SPCC Plans. In addition, she has completed compliance assessments to determine facilities level of compliance with current SPCC regulations. As part of the compliance assessment, Ms. Marion would review facilities SPCC plans and provide recommendations to ensure compliance with applicable regulations. Ms. Marion has also provided presentations on an overview of the requirements and development of SPCC Plans.

Pre Disaster Mitigation (PDM) Grant Program Applications

The Pre-Disaster Mitigation (PDM) Grant Program provides funds to States, territories, municipalities, and special districts for pre-disaster mitigation planning and the implementation of cost-effective mitigation measures prior to a disaster event. Funding these plans and projects reduces overall risks to people and property, at the same time reducing reliance on funding from actual disaster declarations.

The completion of PDM Grant Applications requires the compilation of pertinent background information, mitigation plan information, project description (including scope of work, cost estimates, and identified alternatives), hazard information and analysis (including damage history), environmental impacts, and a detailed risk-based benefit-cost analysis.

The Benefit-Cost Analysis (BCA) for implementing the mitigation projects is required to justify cost-effectiveness of the proposed project. The Cost-Effectiveness information section of the PDM Grant Application requires a thorough BCA (with supporting documentation), the identification of the source of the problem, frequency of the hazard, severity of the hazard, properties at risk, and mitigation project alternatives.

Ms. Marion assisted the Western Municipal Water District, Cucamonga Valley Water District, Tustin Unified School District, Elsinore Valley Municipal Water District, and Sierra County in the PDM Grant Applications process. The Western Municipal Water District grant project focused on the retrofit and rerouting of potable and non-potable pipelines (approximately \$ 1,903,500.00), while the Cucamonga Valley Water District involved the filing of four grants. The Cucamonga Valley Water District project focused on replacing inlet, outlet and

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interconnection piping with flexible expansion joints and installing automatic seismic shutoff controller for four different reservoir locations (approximately \$71,000 to \$103,000 each grant). All four of the Cucamonga Valley Water District PDM Grant Applications received approval. Ms. Marion assisted Tustin Unified School District (approximately \$75,000), Elsinore Valley Municipal Water District (approximately \$150,000), and Sierra County (approximately \$50,000) with planning grants. These grants will assist the facilities in development of comprehensive Hazard Mitigation Plans, which will later allow them to be eligible for project grants.

Hazard Mitigation Plan

Ms. Marion has assisted in developing a FEMA-approved Hazard Mitigation Plan for the City of Tustin, which includes the development of a baseline understanding of the natural hazard risks, determining ways to reduce those risks, and prioritizing recommendations for implementation. An open, public process is used to verify candidate hazards, determine the full impacts throughout the planning area, interface with partner agencies to determine existing mitigation measures, develop possible approaches to projects which will reduce the impacts, and prioritize them for implementation. The analysis of current vulnerabilities and potential threats results in a prioritized list of recommended improvements and the estimated costs of implementing the improvements.

Ms. Marion has assisted in developing the HMP in accordance with FEMA requirements using the tools provided by FEMA and techniques developed from our background in Qualitative Risk Assessment (QRA), Seismic Safety, and Risk-Based Decision Making (RBDM). Hazard profiles, including vulnerability to earthquakes, floods, fires, power outage, and dam failure, were developed to serve as the basis for the damage assessment and corresponding loss estimates. Estimating losses is essential to decision-making, providing a basis for developing mitigation plans and policies, emergency preparedness, and response and recovery planning.

Hazardous Material Inventories/Business Emergency Plans

Ms. Marion has assisted many facilities in completing their Hazardous Material Inventories/Business Emergency Response Plans (HMI/BEP) Disclosures for their local Administering Agency or fire department. As part of these efforts Ms. Marion has worked with facility personnel to ensure that all hazardous materials located onsite were inventoried and locations verified. Completion of the HMI/BEP's also included reviewing and documenting facilities emergency response procedures to ensure regulatory compliance and creating detailed maps of hazardous material locations and evacuation routes.

Sanitary Sewer Maintenance Program (SSMP)

In May 2006 the State Water Resources Control Board (SWRCB) adopted the Waste Discharge Requirements (WDR), a regulatory program which will provide a consistent statewide approach to operation, maintenance, and management plans to reduce Sanitary Sewer Overflows (SSOs). Ms. Marion has assisted and managed the development of SSMP Program elements for the City of Manhattan Beach, including Compliance Assessment,

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Assessment Report, and Development Plan. The Compliance Assessment consisted of Ms. Marion assisting in onsite review and records verification for SSMP Program compliance/completion and development of a Compliance Assessment report, including recommendations. Ms. Marion is also assisting in development of the SSMP Development Plan.