EPS
ENVIRONMENTAL PERMITTING SPECIALISTS
Air Quality • Permitting • OHSA • RMP/PSM

July 26, 2019

Mr. Sean Brewer, Public Works Director (I)
City of Coalinga
155 W Durian
Coalinga, CA 93210

Subject: Proposal for regulatory required programs related to the storage and use of chlorine at the City's Water Treatment Plant per PARSAC findings.

Dear Mr. Brewer,

Thank you for your telephone call of July 16. Environmental Permitting Specialists (EPS) is pleased to respond to the City's request for assistance. As the Risk Manager for PARSAC, Mr. Erike Young, discussed the fact that the storage and use of chlorine above threshold quantities triggers certain kinds of regulatory oversight. Our conversation went into this in a little more depth. Specifically, the programs and threshold quantities are as follows:

Threshold Qty. Cl_2	Program	Submitted to
100 pounds	California Environmental Reporting System (CERS)	Fresno County Certified Unified Program Agency (CUPA) through website. (CUPA inspects triennially).
	California Accidental Release Prevention Program (CalARP) also called Risk Management Program (RMP)	Fresno County CUPA (CUPA inspects triennially).
1,500 pounds	Process Safety Management (PSM) Program	No submission required. Must have program and documentation available for unannounced Cal / OSHA inspections through a High Hazard Unit. Typical inspection not more than once every 5 years unless an injury occurs. Initial inspection can occur any time.
2,500 pounds	Accidental Release Prevention (ARP) Program called Federal Risk Management Program (RMP)	USEPA through its Central Data Exchange server. (EPA can but seldom inspects except for releases).

The City is subject to all of these programs as it maintains up to 4 tons of chlorine at the water treatment plant (WTP). I looked on public websites prior to creating this proposal. The City of Coalinga does not appear on any of them indicating that no program was ever filed.

The CERS program is an outgrowth of the Hazardous Materials Business Plan which was required in 1986. CERS online reporting replaced paper Hazardous Materials Business Plan submissions when it became mandatory in 2013.

A predecessor of the CalARP (RMP) program called Risk Management Prevention Plans (RMPP) was required in 1994. It's outgrowth, CalARP, was required in 1999 when the Federal EPA made its RMP rule mandatory June 1999. Cal / OSHA PSM programs were required beginning in 1992. Cal / OSHA started its own high hazard enforcement unit to inspect PSM facilities approximately 2003.

In terms of program development, the CERS reporting system is its own entity. Its development is separate from the other programs. The RMP and PSM programs, however, are highly interrelated. The basic difference between RMP and PSM programs is that the RMP program is an EPA - CalEPA program that concentrates on minimizing damage to the environment and the surrounding population. PSM is an OSHA - Cal/OSHA program the deals solely with employee health and safety. The RMP and PSM programs are similar enough in nature and in the elements required, that one program element can usually be applied to all three programs (PSM and Federal and California RMP).

Proposed Work

CERS

CERS requires that the City file information through the CalEPA server and be inspected by Fresno County CUPA. The online forms require a declaration page, a page describing the subject programs, a list of all flammable, hazardous and extremely hazardous chemicals, a facility site plan, an emergency response plan, and training carried out for the employees. The declarations page provides information as to who is legally responsible. It also names the environmental coordinator and the emergency contact(s). Finally, it provides billing information for the County to assess fees. All chemicals that are flammable, hazardous or highly hazardous and are above threshold quantities are listed on the chemical forms and a site plan showing each chemical storage location is created. This information is also passed to the Fire Department to provide them with forewarning in the event of an emergency. A list of emergency equipment and employee training is required demonstrating employer activity and employee preparedness in the event of a release.

RISK MANAGEMENT PLAN (RMP)

There are three aspects to the RMP:

1. the California program,
2. the Federal program, and
3. the prevention program elements used to minimize the result of any potential release.

The California (CalARP/RMP) program requires registration with the CUPA as the first step. We recommend that this occurs around the kickoff meeting. This will inform the CUPA that required programs are currently in development and it will give them input into the time frame. It will probably also minimize the risk of any fines.

Once the CalARP program is started, the City can apply for a Federal identification number to allow for Federal registration. This is the first step in in registering with the EPA. (The prevention program elements will need to be completed to finish the registration).

Prevention program elements are a major portion of the RMPs. They are nearly the same as those required by Process Safety Management and will be addressed below. In addition, the RMPs require a management section, offsite consequence hazard analysis and an emergency response program.

PROCESS SAFETY MANAGEMENT (PSM)

PSM is essentially about managing the risks associated a toxic or flammable release by preventing situations to the greatest extent possible, that could create a near miss or a release situation. That is why the elements of this program are called prevention elements.
There are 13 prevention elements that must be addressed:

1. Process Safety Information.
2. Process Hazard Analysis.
3. Operating Procedures.
4. Training.
5. Contractors.
6. Pre-Startup Safety Review.
7. Mechanical Integrity.
8. Hot Work Permit.
9. Management of Change.
10. Incident Investigation.
11. Emergency Planning and Response.
12. Injury and Illness Prevention.
13. Employee Participation.

In addition, a compliance audit is required every 3 years by Federal OSHA and by the RMP programs. Other health and safety programs such as respiratory protection, eyewash shower, lock out / tagout, etc. are required as needed.

A document showing major RMP and PSM program elements and the method for meeting them is enclosed as a guideline.

Work Plan

The first external activity will be to contact Fresno County Environmental Health to discuss the situation. They are required to "work closely" with the facility to achieve compliance. Fresno County has 61 RMP sites currently and have expertise in this. Our expectation is that they will want a time line with deliverables.

The next step is to hold a kickoff meeting that will take the County input, City personnel and RMP/PSM contractor schedules into account and create a schedule for the rest of the project. There are approximately 190 hours planned to create these documents as well as train City personnel on recurring activities and ways to remain in compliance. Coordinating scheduling for all personnel involved will mean that the project will run 90 to 120 days. During this time period 4 days onsite are included: A kickoff day including collecting Process Safety Information, a day to perform the Process Hazard Analysis, a day to review draft documentation and discuss changes, and a day for training.

At the end of the project, our desire is that City personnel have the ability to perform most of the compliance activities themselves (certify operating procedures, document maintenance, perform emergency action plan drills, etc.). In order for this to function, it is necessary that the regulatory work flow works in parallel with the daily activities required for producing water.

The order of activities will probably be:

- Input data into CERS.
- Provide a California RMP registration.
- Begin the process of registering the water treatment plant with the Federal EPA Central Data Exchange Server.
- Begin creating the PSM program with the Process Hazard Analysis.
- Begin creating the RMP program with the Offsite Consequence Analysis and Emergency Response Plan.
- Review the data and documents.
- Perform training.

Budget

The attached breakdown of labor costs is based on our understanding of the water treatment plant derived from several photographs and email correspondence. No site visit has been performed. Additionally, EPS has not contacted Fresno County CUPA to determine whether they have any County specific requirements that are not listed on their web site. (An example of this could be that they require a PE signed structural walkdown of the facility which is not included in this estimate).

While we expect this budget to be accurate, some conditions beyond our control may affect it. For this reason, we are proposing that the work be performed on a time and materials basis. We have included a rate sheet.

Breakdown of Labor Costs Based on $165 per Hour		
Details	Hours	($)
CERS Program	11	$ 1,815
PSM program including binder		
Facility writeup and prevention elements	40	
Process Safety Information and kickoff meeting	14	
Process Hazard Analysis	20	
Operating Procedures	16	
Maintenance Documentation	6	
Review and Production (@ $ 80/hr.)	10	
Total PSM	106	$ 16,640
RMP Program including binder		
Facility writeup and required elements	16	
Executive Summary	2	
Registration and Data Elements	5	
Offsite Consequence Analysis	4	
Emergency Response Plan for Cl_2	6	
Review and Production (@ $ 80/hr.)	10	
Total RMP	43	$ 6,245

Breakdown of Labor Costs Based on $165 per Hour		
Details	Hours	($)
Respiratory Protection Program	8	$ 1,320
Onsite review of all draft material	8	$ 1,320
Training (RMP/PSM/ Operating Procedures,		
Required Periodic Activities, etc.)	12	$ 1,980
BUDGETED HOURS	188	$ 29,320
DISCOUNT FOR REFERRAL FROM PARSAC	10%	($ 2,932)
Travel (budgeted at 525 mi RT @ $0.75/mi, hotel @ $150/night, and per Diem @ GSA rates for Fresno Co). (4 trips @ $642.75) Expenses will be billed at cost		
BUDGETED EXPENSES		$ 2,571
BUDGETED COST		$ 28,959

We have provided a discount for the referral from PARSAC. You will find a 10 % discount that is applied directly to the labor portion of this budget.

Organization and Qualifications

Environmental Permitting Specialists (EPS) is a 25+ year old consulting group owned and managed by Ray Kapahi. Mr. Kapahi is an air permitting specialist who has experience in hazard assessments for all types of air releases. EPS maintains a small group of independent consultants that work individually or together depending on the work project. EPS added an RMP/PSM specialty in 2016 when it added Carter Redding as a partner in the group. Carter is the primary contact for this work.

Carter has worked with Process Safety Management and Risk Management since 2003. He is a Certified Hazardous Materials Manager and has maintained his certification since 2003. Prior to working with EPS, he worked for Oscar Larson and Associates and Condor Earth Technologies. He managed the RMP and PSM groups at both firms. He has created programs for several different chemicals but specializes in chlorine and sulfur dioxide for water and wastewater treatment. He has created numerous RMPs and/or PSMs and worked with over 40 clients in 6 states performing this work.

He has experience in OSHA compliance. He has also been the trainer for the Cal / OSHA PSM enforcement division in 2013 (ammonia refrigeration) and 2019 (chlorine and sulfur dioxide in water and wastewater treatment).

A copy of his resume is included.

References

The accompanying list is a selection of current clients.

City of Sacramento
Facility: E. A. Fairbairn Water Treatment Plant
Sacramento River Water Treatment Plant
Contact: David Herrmann, Water Production Superintendent
(916) 808-5652 dherrmann@cityofsacramento.org

City of Redding
Facility: Foothill Water Treatment Plant
Buckeye Water Treatment Plant
Contact: Conrad Tona, Superintendent
(530) 225-4552 ctona@cityofredding.org

Bella Vista Water District
Facility: Wintu Pumping Plant
Contact: Tom Zaharris, Superintendent
(530) 224-6501 tzaharris@bvwd.org

Clear Creek Community Services District
Facility: Water Treatment Plant
Contact: Rick Cascarina, Assistant Superintendent
(530) 357-2121 rickc@clearcreekcsd.com

City of Nevada City
Facility: Nevada City Wastewater Treatment Plant
Nevada City Water Treatment Plant
Contact: Kevin Timms, WTP and WWTP Chief Plant Operator
(530) 265-2496 Kevin.Timms@nevadacityca.gov

If you have any questions or require additional information, please contact Carter Redding at (530) 906-6802 or by e-mail at carter.redding@gmail.com at your convenience. We appreciate your consideration for this work.

Sincerely,

Carter Redding, Partner
Environmental Permitting Specialists
7068 Riverside Blvd
Sacramento CA 95831

Attachments: Program Requirements and Method for meeting them
Resume Carter Redding
EPS Rate Sheet

SUMMARY OF MAJOR RMP & PSM REQUIREMENTS AND RESPONSIBILITIES WITH THE CITY OF COALINGA WITH METHODS FOR MEETING THEM

CA RMP 19 CCR[1]	CA PSM 8 CCR[2]	Summary Description of Element
2735.6		***Program Management System.*** Owner must develop a management system to oversee the implementation of the Risk Management Plan (RMP). A qualified person must be in charge of the implementation of the entire plan. Where multiple people are used to implement different parts of the plan, authority must be delegated and delineated.
		Method for meeting requirement: The City of _____uses a document management system to track various elements of the plan. The City's _____ is responsible for overall implementation of all elements.
		Responsible Individual:
		Required Review: System changes, some personnel changes, audit recommendations, and 5-year updates — ***Last Reviewed:*** ***Next Scheduled Review:***
		Required Revision: Only when conditions change. — ***Status:***
2745.5		***Accident History.*** Owner or operator must submit an accident report over each accident that has occurred during the last 5 years.
		Method for meeting requirement: There have been no accidents within the last ___ years.
		Responsible Individual:
		Required Revision: When an accident or near miss occurs. — ***Last Revision:*** N/A ***Next Scheduled Revision:*** N/A
		Status: No action presently needed.
2745.10		***RMP Updates.*** Owner or operator shall update the RMP every five (5) years or within six (6) months of an occurrence that requires a revised process hazard analysis or offsite consequence analysis. Other required updates include within three (3) years of new process listed by Cal OES or before a new process is started for an existing chemical.
		Method for meeting requirement: Updates are performed according to the requirement.
		Responsible Individual:
		Required Revision: Every 5 years or whenever a revised hazard review or offsite consequence is required. — ***Last Revision:*** _____ (Federal) _____ (CalARP) ***Next Scheduled Revision:*** _____(Federal) _____ (PHA and 5-year update)
		Status: No action presently required.

2745.10 .5	***Required RMP Corrections.*** Owner or operator must submit information within 6 months of an accident or within 30 days of change in emergency contract. ***Method for meeting requirement***:
	Responsible Individual:
	Required Review: Before all PHAs and 5-year updates. After an emergency contact is changed. ***Last Reviewed:*** _____ (5-year Federal Update) ***Next Scheduled Review:*** At the next PHA and 5-year update. (_____)
	Required Revision: Only when conditions change. ***Status:*** No action presently needed.
2745.11	***Covered Process Modification.*** The owner or operator must manage change of covered processes when either the risk associated with the chemical or its quantity changes significantly. The RMP must be updated within 6 months of this occurring.
	Method for meeting requirement: Management of Change and Pre-Startup Safety Review procedures are part of the Process Safety Management program.
	Responsible Individual:
	Required Review: Before changing the process ***Last Reviewed:*** ***Next Scheduled Review:***
	Required Revision: Only when conditions change. ***Status:*** No action presently needed.
2745.12	***Certificate of Occupancy.*** The building owner or operator must obtain a Certificate of Occupancy before operating a process with RMP quantities of chemicals.
	Method for meeting requirement: Building and process pre-date RMP requirements and are grandfathered in.
	Responsible Individual:
	Required Review: During the Management of Change ***Last Reviewed:*** N/A ***Next Scheduled Review:*** N/A
	Required Revision: Only when conditions change. ***Status:*** No action presently needed.

2750.7		***Offsite Consequence Analysis Review and Update.*** Owner or operator must review and update the Offsite Consequence Analysis (OCA) at least every 5 years. The OCA must also be updated in the event that a change in the amount of the regulated substance stored will increase or decrease the toxic endpoint by a factor of 2. This must be done within 6 months of changing the amount of chemical onsite.
		Method for meeting requirement: The _____ does not anticipate changing the amount of regulated substance onsite.
		Responsible Individual:
		Required Review: At the time of the 5-year update ***Last Reviewed:*** ***Next Scheduled Review:***
		Required Revision: Only when conditions change. ***Status:*** No action presently needed.
2760.1	**5189(d)**	***Process Safety Information.*** Employer must compile safety information about the chemicals and processes, including P&ID. Must be accessible and communicated to employees involved in the processes. Description of system and chemicals forms the database for the Process Hazard Analysis.
		Method for meeting requirement: A chlorine SDS is used for information regarding the chemicals. Process specifications and design standards are described in the RMP, PSM, and manufacturer O and M manuals. Node descriptions for the Process Hazard Analysis provide part of the Process Safety Information for the system. An up to date PID is maintained.
		Responsible Individual:
		Required Review: Before all Process Hazard Analyses, Audits and 5-year updates ***Last Reviewed: Next Scheduled Review:***
		Required Revision: Only when conditions change. ***Status:*** No action presently needed.

2760.2	**5189(e)**	***Process Hazard Analysis.*** Structured analysis of hazards performed by persons knowledgeable of the process and of hazard analysis techniques, or by checklist developed by such persons. Must include external events to meet California requirements. Must be updated every 5 years and whenever a major change to the system is made. Safety improvement recommendations must be documented and committed actions tracked to completion. Committed recommendations must be implemented prior to starting up a changed system.
		Method for meeting requirement: An RMP consultant, Environmental Permitting Specialists, was used to conduct the Process Hazard Analysis (PHA). The consultant uses a combination of what if/ checklist and additional checklist questions. The subject system is broken down into specific nodes and each is probed for weaknesses. External events are covered. A seismic walkdown was performed _____.
		Responsible Individual:
		Required Review: Every 5 years and before major changes — ***Last Reviewed:*** ***Next Scheduled Review:*** ***Open Commitments***:
		Required Revision: After every review — ***Status:*** Committed Action Tracking created for PHA.
2760.3	**5189(f)**	***Operating Procedures and Safe Work Practices.*** Owner or operator must develop and implement written operating procedures including at least startup, normal operation, temporary operations, operating limits, equipment inspection, and safety precautions. Employer must implement safe work practices including lockout/tagout, other non-routine work authorizations, and site access control.
		Method for meeting requirement: Operating procedures have been written.
		Responsible Individual:
		Required Review: Yearly for currency and applicability. — ***Last Reviewed:*** ***Next Scheduled Review:***
		Required Revision: When conditions change. — ***Status:***
2760.4	**5189(f)**	***Training.*** Each employee involved in a covered process must receive initial training, refresher training, and supplemental training as necessary on operating and maintenance procedures. Training certification records and some form of testing or verification are required.
		Method for meeting requirement:
		Responsible Individual:
		Required Training: Every 3 years maximum or when procedures changes. — ***Last Training:*** ***Next Scheduled Training:*** asap
		Required Revision: — ***Status:*** .

2760.5	**5189(j)**	***Mechanical Integrity (Maintenance).*** Written procedures are required to allow reporting of deficiencies and assure follow-up, to certify performance of each required inspection and test, and to assure that materials and installation are consistent with design specifications and manufacturer's recommendations. Persons performing maintenance (including contract maintenance personnel) must be trained. All equipment including each test and inspection must be tracked cradle to grave on each piece of equipment.	
		Method for meeting requirement: Maintenance, inspection, and testing generally follow manufacturer's recommendations.	
		Responsible Individual:	
		Required Review: Every 5 years and before major changes.	***Last Reviewed:*** ***Next Scheduled Review:***
		Required Revision: As needed	***Status:***
2760.6	**5189(l)**	***Management of Change.*** Employer must develop and implement written procedures to assure that, prior to alteration of process systems, the impact of the change on safety and all related changes to operation and maintenance procedures, process safety information, etc. are addressed.	
		Method for meeting requirement: PSM has required Management of Change information	
		Responsible Individual:	
		Required Review: With each change that is not replacement in kind.	***Last Reviewed:*** 7 ***Next Scheduled Review:*** As needed
			Status:
2760.7	**5189(i)**	***Pre-Startup Safety Review.*** Employer must perform a safety review prior to introducing hazardous chemicals into or starting up a new or significantly modified process. The review must include, among other things, verification that employees have been trained.	
		Method for meeting requirement: PSM has required Pre-Startup Safety Review information.	
		Responsible Individual:	
		Required Review: With each change that is not replacement in kind.	***Last Reviewed:*** ***Next Scheduled Review:*** As needed
			Status: MOC and PSSR is currently up to date

2760.8	**29 CFR 1910. 119(o)[3]**	***Compliance Audits.*** Owner or operator must perform an audit of the Accidental Release Prevention program at least once every 3 years, document the findings, and follow up on committed actions to correct deficiencies. This is a federal requirement, applicable also to California. The employer is required to set up an audit program for the PSM providing for operating procedure certification every year, audits every 3 years, and a follow-up system to assure that audit exceptions are dealt with.
		Method for meeting requirement: An RMP audit will be done. The audit will follow the CalARP and CalOSHA regulations.
		Responsible Individual:
		Required Review: Every 3 years. ***Last Reviewed:*** ***Next Scheduled Review:***
		Required Revision: N/A ***Status of Open Commitments:*** In process
2760.9	**5189(m)**	***Incident Investigation.*** Incident investigations are required to be performed for accidents and near-misses. Report findings are to be reviewed with affected employees, recommendations resolved, and implementation recorded.
		Method for meeting requirement: The PSM has an incident investigation policy. There have been no accidental releases.
		Responsible Individual:
		Required Review: As needed. ***Last Reviewed:*** ***Next Scheduled Review:*** N/A
		Required Revision: As needed. ***Status:*** No action presently needed.
2760.10	**5189(p)**	***Employee Participation.*** Each employee involved in a covered process must receive initial training, refresher training, and supplemental training as necessary on operating and maintenance procedures. Training certification records and some form of testing or verification are required.
		Method for meeting requirement:
		Responsible Individual:
		Required Review: As needed ***Last Review:*** ***Next Scheduled Review:***
		Required Revision: ***Status:*** Out of date
2760.11	**5189(k)**	***Hot Work Permit.*** Employer shall develop and implement a written procedure for permitting welding and cutting operations to prevent fires and explosions. This is related to the fire prevention program required by other sections.
		Method for meeting requirement: The City performs no hot work in the chlorine storage or feeding rooms.
		Responsible Individual:
		Required Revision: As needed. ***Last Revision:*** N/A ***Next Scheduled Revision:*** N/A
		Status: No action presently needed

2760.12	**5189(h)**	***Contractors.*** Employers must inform contractors of hazards involved in the contractor's work and of the facility's emergency action plan, require contractors to maintain training programs and follow safe work practices equal to that required of the employer, qualify candidate contractors in part by reference to their safety record, and periodically evaluate contractor's safety performance.
		Method for meeting requirement: The PSM Program has required information.
		Responsible Individual:
		Required Training: As needed. ***Last Training:*** N/A ***Next Scheduled Training:*** N/A
		Required Revision: ***Status:***
	5189(o)	***Injury and Illness Prevention Plan.*** This is specific to California. The hazard identification, communication, incident reporting, and training elements of the IIPP must be upgraded as necessary to satisfy PSM program requirements.
		Method for meeting requirement:
		Responsible Individual:
		Required Review: Varies ***Last Review:*** ***Next Scheduled Review:*** As needed
		Status:
2765.1 **2765.2**	**5189(n)** **3220**	***Emergency Planning and Response.*** This is essentially the emergency action portion of the required Hazardous Materials Management Plan (Business Plan). If a facility does not maintain First Responder capability, the facility needs to coordinate with the organization providing First Response to releases. Otherwise, a sufficient number of facility personnel need to be properly trained and equipped to respond.
		Method for meeting requirement: _____ maintains an incidental response plan for a variety of conditions. The water treatment plant is a non-responding facility (911 and run).
		Responsible Individual:
		Required Review: Yearly for accuracy. ***Last Reviewed:*** ***Next Scheduled Review:***
		Required Revision: As necessary. ***Status:***
2775.1	**68.200**	***Recordkeeping:*** All records are required to be kept for a minimum of 5 years unless otherwise stated in the RMP regulations.
		Method for meeting requirement The City lacks clear definition of how they will maintain records.
		Responsible Individual:
		Required Review: N/A ***Last Reviewed:*** ***Next Scheduled Review:***
		Required Revision: Continuous as needed. ***Status:*** Needs Update

[1] California Accidental Release Prevention Program Regulations, Title 19 CCR, Div. 2, Chapter 4.5, Section 2735ff.

[2] Cal/OSHA General Industrial Safety Orders, Title 8 CCR Section 5189.

[3] Federal OSHA Title 29 CFR Part 1910.119

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Carter Redding

MS, CHMM

Areas of Expertise

- Risk Management of Highly Hazardous Chemicals
- Health and Safety and Program Preparation
- Emergency Action / Response Programs
- First Responder Training
- General OSHA Compliance

Industries Served

- Water and Wastewater Treatment
- Industrial Processors
- Agricultural Food Processors
- Energy Sector – Combustion Turbines

Registration & Certifications

- Certified Hazardous Materials Manager, 2003, #12242
- CSTI First Responder Awareness, Operations, Industrial Technician & Decon
- NIMS SEMS ICS 100, 200, 800, 900 compliant.

Special Training

- Previous American Red Cross Instructor and Instructor / Trainer for US DOT Emergency Medical Response Courses
- Co-instructor Aircraft First Responder Awareness

Professional Organizations

Member, Association of Hazardous Materials Managers

Member Infragard

Education

M.S., Earth Science, Case Western Reserve University, Cleveland, Ohio, 1976
B.A., Geology, Case Western Reserve University, Cleveland, Ohio, 1973

Representative Experience

Carter Redding has over 17 years of experience in the fields of hazardous materials, regulatory compliance and emergency planning, response management and training. He has more than 35 years of experience in the general fields of research, engineering, and applied science. His specialty includes utilizing his diverse experience to produce unique solutions for his clients' challenges, and being able to work and manage different personnel from different groups in a team setting. He has managed a health and safety division that consulted with clients on ammonia refrigeration, water and wastewater issues, pesticides, and worker health and safety. He currently uses his management experience to create individual solutions that meet his client's organizational needs.

He is a partner with Environmental Permitting Specialists where he evaluates and mitigates client regulatory exposure He is responsible for implementing comprehensive hazardous materials risk assessment, regulatory program responses, and management overview of client sites. He provides site investigations and develops various CUPA and Cal / OSHA programs. He has managed Program 2 and 3 chemical Risk Management and Process Safety Management programs at customer requests. This includes specialized documentation required for Hazard Reviews and Process Hazard Analyses.

Mr. Redding has provided inspections and mock OSHA inspections to gauge client's level of compliance and to help them prepare for regulator visits.

He has also performed physical and chemical security vulnerability assessments. As with hazardous material risk assessments, this work has three phases: The vulnerability assessment, the development of the emergency response plan, and the training program to effectively implement it.

Mr. Redding provides training on a variety of topics for OSHA, EPA and Emergency Medical Response.

7067 Riverside Blvd. • Sacramento CA 95831 carter.redding@gmail.com • (530) 906-6802

Patents

Hydrocyclone having an unconstrained vortex breaker. U.S. Patent 6,849,182. Issued 2/1/2005
Air Emulsion Suspension Generator. Application 8/2017

Volunteerism

Past President, Sacramento Regional Citizen Corps Council (SRCCC) SRCCC received Citizen Corp of the year award for a city over 1 million in 2009

Lecturer / Invited Speaker

Monterey County CUPA 2004-2006

Continuing Challenge, Sacramento CA. Aircraft Hazardous Materials 2009-2010.

Sacramento ASSE Professional Development Conference: Process Safety Management 2009

CWEA Northern Section Conference 2009: Surviving the aftermath of a disaster. Preplanning infrastructure for a FEMA mitigation effort.

Lecturer for advanced ammonia training for Cal / OSHA PSM Unit 2013

Lecturer for advanced chlorine and sulfur dioxide training for Cal / OSHA PSM Unit 2019

Selected Projects

- **City of Sacramento, Utilities Department, Sacramento CA**. Project: Provide comprehensive support for RMP required updates including 5-year updates, Process Hazard Analyses, and Compliance audits. Work was for 2 Water Treatment Plants and 32 wells. Goal: Provide compliant documents for Sacramento County Environmental Health Department. Help coordinate work across the three groups that are associated with isk Management Programs
- **Arctic Glacier Ice, Elk Grove CA**. Project: Provide RMP required documentation for a 700 Ton/day ice plant. Goal: Determine the technical sufficiency of the RMP. Provide documentation needed to remain compliance.
- **Orange County Sanitation District, Fountain Valley CA**. Project: Assess overall health and safety and regulatory compliance programs at the District's two large wastewater treatment plants in preparation for VPP submission. Goal: Assist prime contractor in evaluating programs by providing expertise in programs and in the functioning of the two plants. Determine level of compliance with California and Federal OSHA EPA and ARB regulations.
- **Nevada City Water and Wastewater Treatment Plants, Nevada City CA**. Project: On-call safety consulting including RMP, PSM, First Responder Training, Multi-hazard mitigation planning, and Other Cal/OSHA – Cal/EPA programs. Provide guidance for two Cal /OSHA informal settlement conferences. Goals: Provide short-term effective response to City needs. Provide effective defense to a citation that would have required the City to change disinfection equipment. (The citation was rescinded).
- **City of Redding Department of Utilities, Redding, CA**. Project: Provide RMP and PSM assistance for two water treatment plants, two wastewater treatment plants, and 13 water wells over the last 10+ years. Assist in response to a Cal/OSHA PSM citation and preparation for an informal settlement conference. Goal: Provide oversight and functional systems that keep client in regulatory compliance.
- **Oakdale Irrigation District, Oakdale, CA**. Project: Provide Cal-ARP and PSM required documentation for District's acrolein usage. Goal: Provide PHA and oversee required documentation for compliance.

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January 1, 2019

Rate Schedule	
Labor Details	($) / hour
Partner / Principal	$165
Administration / Clerical	$ 80
Travel Time [1]	$ 90
Expense Details	($) /unit
Food, Lodging, Travel Expenses, Incidentals	At cost
Mileage (Actual)	$0.75/mile
Equipment Rental, Production Costs, Miscellaneous	At cost

[1] **Initial 4 hours travel time covered. Rate beyond covered 4 hours.**