

CalARP Prevention Program Elements

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Process Safety Management

Specialist,

Condor Earth



CONDOR

Purpose of CalARP is to:

- Prevent accidental releases of substances that can cause serious harm to the public and the environment;
- Minimize the damage if releases do occur; and
- Satisfy community right-to-know laws.

Prevention Program Elements?

COVID
CORONAVIRUS
DISEASE
19

**What you need to know about
coronavirus disease 2019 (COVID-19)**

There are simple everyday preventive actions to help prevent the spread of respiratory viruses. These include

- Avoid close contact with people who are sick.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Wash your hands often with soap and water for at least 20 seconds. Use an alcohol-based hand sanitizer that contains at least 60% alcohol if soap and water are not available.

Have there been cases of COVID-19 in the U.S.?

Yes. The first case of COVID-19 in the United States was reported on January 21, 2020. The current count of cases of COVID-19 in the United States is available on CDC's webpage at <https://www.cdc.gov/coronavirus/2019-ncov/cases-in-us.html>.

How does COVID-19 spread?

The virus that causes COVID-19 probably emerged from an

illness to others, you should

- Stay home when you are sick.
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- Clean and disinfect frequently touched objects and surfaces.

What should I do if I recently traveled to China and got sick?



Prev

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Help prevent the spread of respiratory diseases like COVID-19.

Avoid close contact with people who are sick.



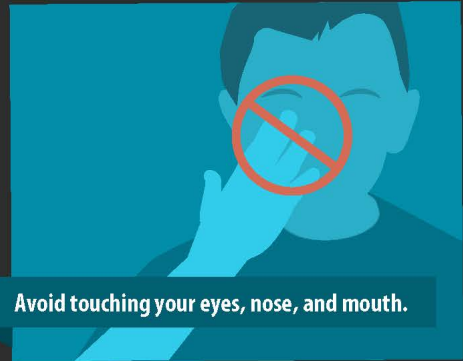
Cover your cough or sneeze with a tissue, then throw the tissue in the trash.



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Avoid touching your eyes, nose, and mouth.



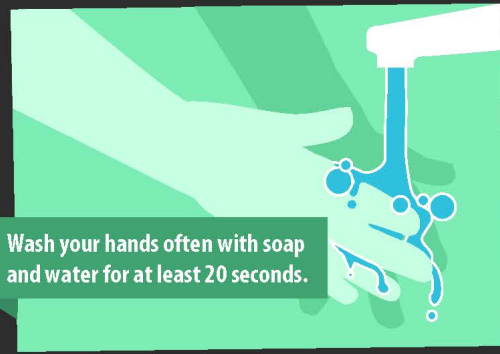
Clean and disinfect frequently touched objects and surfaces.



Stay home when you are sick, except to get medical care.



Wash your hands often with soap and water for at least 20 seconds.



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Yes. The f
reported
of COVID
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How do
The virus



For more information: www.cdc.gov/COVID19

PSM / RMP / CalARP Components

- Registration.....(*RMP/CalARP*)
- Executive Summary.....(*RMP/CalARP*)
- Management System.....(*RMP/CalARP*)
- Prevention Program Elements.....(*PSM/RMP/CalARP*)
- Hazard Assessment.....(*RMP/CalARP*)
- Emergency Response Program....(*PSM/RMP/CalARP*)
- Documentation.....(*PSM/RMP/CalARP*)



CalARP Program 2 and Program 3 Prevention Programs

Program 2 Requirements

Safety Information

Operating Procedures

Training

Maintenance

Incident Investigation

Hazard Review

Compliance Audits

Program 3 / PSM Requirements

Process Safety Information

Operating Procedures

Training

Mechanical Integrity

Incident Investigation

Process Hazard Analysis

Compliance Audits

Employee Participation

Contractors

Hot Work Permit

Management of Change

Pre-startup Safety Review



CalARP Program 3 Overlap

Section	US EPA RMP (40 CFR)	OSHA (29 CFR)	CalARP (19 CCR)	Cal/OSHA PSM (8 CCR)
Process Safety Information	68.65	1910.119 (d)	2760.1	5189 (d)
Process Hazard Analysis	68.67	1910.119 (e)	2760.2	5189 (e)
Operating Procedures	68.69	1910.119 (f)	2760.3	5189 (f)
Training	68.71	1910.119 (g)	2760.4	5189 (g)
Mechanical Integrity	68.73	1910.119 (j)	2760.5	5189 (j)
Management of Change	68.75	1910.119 (l)	2760.6	5189 (l)
Pre-Startup Safety Review	68.77	1910.119 (i)	2760.7	5189 (i)
Compliance Audit	68.79	1910.119 (o)	2760.8	
Incident Investigation	68.81	1910.119 (m)	2760.9	5189 (m)
Employee Participation	68.83	1910.119 (c)	2760.10	5189 (p)
Hot Work Permit	68.85	1910.119 (k)	2760.11	5189 (k)
Contractors	68.87	1910.119 (h)	2760.12	5189 (h)
Emergency Planning & Response	68.95	1910.119 (n)	Article 7	5189 (n)

Process Safety Information

Information pertaining to the technology of the process:

- Safety Data Sheet (SDS) for regulated substance
- Block flow/process flow diagram (PFD)
- Process chemistry
- Maximum intended inventory
- Safe upper and lower limits
- An evaluation of consequence of deviation

Process Safety Information

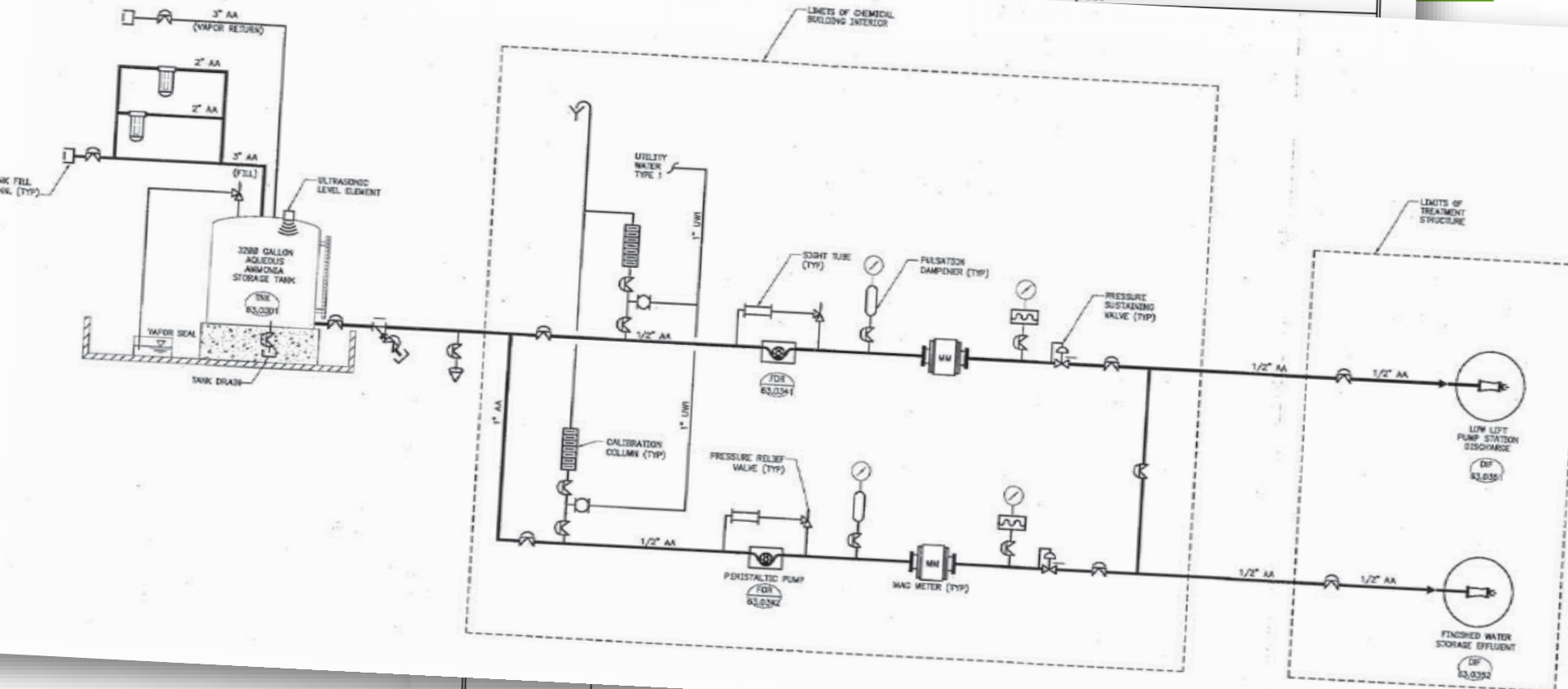
Information pertaining to the equipment in the process:

- Materials of construction
- Process and information diagrams
- Electrical classification
- Relief system design and design basis
- Ventilation system design
- Design codes and standards
- Material and energy balances
- Safety Systems
- Document process complies with recognized and generally accepted good engineering practices (RAGAGEP)

Drop

1.1 NORMAL OPERATING RANGE

Equipment	Parameter	Operating Range	Consequence of Deviation
Storage Tank	Pressure	0 - 25 psi	Potential damage to tank and release of ammonia liquid or vapor.



Sump	LSH-63.0302	High Level	6" from the bottom of the sump	2	<ul style="list-style-type: none"> If low level, arrange for tank fill Acknowledge the alarm Stop ammonia unloading Visually check secondary containment sump If an emergency situation is present, initiate emergency action plan
Pump	FAH-63.0341 FAH-63.0342	High Flow	2 gpm	1	<ul style="list-style-type: none"> Acknowledge the alarm

Process Hazard Analysis (PHA)

- Required to be updated every 5 years or when major change occurs
- Was the PHA conducted by a team with at least one person knowledgeable in the process and a person knowledgeable in the methodology used?
- Was the CUPA consulted on the choice of methodology and involved with or invited to the PHA study session?
- Were the required elements addressed?
 - Hazards of the process
 - Previous incidents
 - Detection methods, control instrumentation and alarms
 - Failure of administrative and engineering controls
 - Qualitative evaluation
 - External events



Process Hazard Analysis

- San Joaquin County Environmental Health requires recommendations to be completed within 1 year. If more time is needed, request an extension for more time to implement recommendations.
- Document closure of recommendations and include:
 - Action taken to address/resolve recommendation
 - Person assigned
 - Estimated date of completion
 - Actual date of completion
 - Communicate with employees that may be affected by recommendations or actions taken

Operating Procedures

Written operating procedures that provide clear instructions for safely conducting activities consistent with the process safety information.

Operating procedures must include steps for each operating phase:

- Initial startup
- Normal operations
- Temporary operations
- Emergency shutdown including conditions when shutdown is required, assignment of responsibility to qualified operators and executed in a timely manner
- Emergency operations
- Normal shutdown
- Startup following a turnaround or after an emergency shutdown

Operating Procedures

Operating procedures must include operating limits:

- Consequences of deviation (references to other documents are not acceptable)
- Steps to correct or avoid deviation
- Health and safety considerations (hazards, precautions, PPE, engineering and administrative controls)
- Quality control for raw materials and inventory levels
- Any special or unique hazards
- Safety systems and their functions

Operating Procedures

Operating procedures must be:

- Readily accessible to employees who work in or maintain a process;
- Reviewed as necessary to reflect current practice and changes to chemicals, technology, equipment and changes to the stationary source; and
- Certified annually that they are current and accurate.

Also, develop safe work practices for employees and contractors:

- Lockout/tagout;
- Confined space entry;
- Opening process equipment/piping; and
- Control entry into the stationary source by support personnel.



Operating Procedures

		Procedure	
		Steps	Details
A St T:	P D S F F T I I +	1. Operator: Check tank level	Check tank level to determine appropriate amount to be delivered. Tank should not be filled over the high-level alarm (8') Consequence of Deviation (COD): High level in the tank can cause a release of ammonia vapor to the J tube vapor seal.
		2. Operator: Record tank level	Record level on the Daily Log. COD: Unable to properly monitor ammonia feed rates.
		3. Operator: Check shipping manifest	Check shipping manifest prior to unloading to determine it is the 19-percent aqua ammonia. Ensure the current tank level plus amount on the manifest would not exceed the high level of 8'. COD: Unintended mixing of aqueous ammonia and other chemicals can cause hazardous reactions. High level can release ammonia vapor to the J tube vapor seal.
		4. Operator: Confirm delivery to aqua ammonia tank	Direct and accompany the chemical carrier to the aqueous ammonia fill station. COD: Unintended mixing of aqueous ammonia and other chemicals can cause hazardous reactions.
		5. Operator: Monitor transfer	Monitor transfer from the control room on SCADA and observing the carrier from the control room window. COD: Unable to detect or delay in detecting an issue when carrier is filling aqueous ammonia tank.
		6. Carrier: Don PPE	Don PPE required to be worn for aqueous ammonia transfer. COD: Failure to wear personal protective equipment can result in critical or life-threatening injury from an aqueous ammonia exposure.
		7. Carrier: Remove fill cap	Remove the fill cap of the aqueous ammonia tank. COD: Fill cap must be removed to make hose connection to fill port.
		8. Carrier: Remove vapor return cap	Remove the vapor return cap of the aqueous ammonia tank. COD: Fill cap must be removed to make hose connection to fill port.
		9. Carrier: Confirm secure connection tank fill quick connect coupler	Carrier connects fill piping to quick connect coupler. Secure connections must be confirmed prior to unloading. COD: A poor connection could result in ammonia release to the

Training

Employees who operate a process must be trained.

Initial training

- Overview of the process;
- Operating procedures;
- Emphasize hazards, emergency operations, and safe work practices in initial training.

Refresher training (every 3 years or when necessary)

- Assure understanding and adhere to operating procedures.
- Consultation with employees for frequency

Training

Training documentation must include the:

- Identity of the employee;
- Date of training; and
- Means used to verify that the employee understood the training:
 - Observation
 - Written test
 - Demonstration

Mechanical Integrity

Written procedures to maintain the ongoing mechanical integrity of process equipment (in house or contractor)

- Inspection and testing must be performed to industry standards
- Documentation on inspections and test must include:
 - Date;
 - Name of person;
 - Equipment ID;
 - Description of inspection or test; and
 - Results of the inspection or test

Mechanical Integrity

Equipment deficiencies (outside process safety information limits)

- Must be addressed before further use or taken out of service when safe to do so.
- Document actions taken to correct deficiencies before further use of equipment.

Quality assurance of equipment process application:

- Assure new equipment is suitable for process application
- Perform checks and inspections to assure equipment is installed properly and consistent with manufacturer's instructions
- Assure spare parts and equipment are suitable for process application

Management of Change (MOC)

Written procedures to manage changes other than “replacements in kind” that affect the process. MOCs must address the following prior to any change:

- Technical basis
 - Impact on health and safety
 - Modifications to and/or development of new operating and maintenance procedures
 - Necessary time period for change
 - Authorization requirements for the proposed change
-
- Update operating and maintenance procedures prior to start-up
 - Complete employee training prior to start-up
 - Update process safety information

Safety Device	Size / Capacity	Setpoint	Purpose	Corrective Action
Pump Pressure Relief Valve	NA	25 psi	Relieves excess pressure from ammonia pump discharge to pump suction piping.	PRV releases pressure to pump suction piping.
Tank Pressure Relief Valve	202 <u>gpm</u>	25 psi	Relieves excess pressure from ammonia tank and discharges to vapor seal.	PRV releases pressure to vapor seal.

Procedure

Steps		Details
1.	Place pumps into AUTO	At FDR-63.0341 and FDR-63.0342 , place the AUTO-MANUAL switch in AUTO position. Consequence of Deviation (COD): Potential operational issue for one or both application points.
2.	At SCADA, select MODE CONTROL	At SCADA, on the AA system screen: select MODE CONTROL COD: Potential operational issue for one or both application points.
3.	Select NORMAL control	At SCADA select NORMAL control COD: Potential operational issue for one or both application points.
4.	Select RATIO, FLOW PACED OR CLOSED LOOP , as desired	RATIO, FLOW PACED OR CLOSED LOOP , as desired. Flow Paced is normally used. COD: Potential operational issue for one or both application points.
5.	Select SETPOINT	Select SETPOINT COD: Potential operational issue for one or both application points.
6.	Input the setpoints	Input the setpoints at the FEEDER SETPOINT popup screen. COD: Potential operational issue for one or both application points.
7.	Select pump number 1 (FDR-63.0341)	Select pump number 1 (FDR-63.0341) COD: Potential operational issue for one or both application points.
8.	Select AUTO control	Select AUTO control on the HAND-OFF-AUTO (H-O-A) Chemical Feed Control Screen . The operation of the feed pump used to meter aqua ammonia to the LLPS discharge is controlled by the operator-selected control mode. COD: Potential operational issue for one or both application points.

Pre-Startup Safety Review (PSSR)

PSSR is required when modification or change is significant and process safety information changes. Prior to introduction of substance or startup of process verify:

- Construction and equipment is in accordance to design specifications
- Safety, operating, maintenance, emergency procedures are in place and adequate
- Training for each employee operating the process has been completed

PHA would be required for a new stationary source and an MOC would be required for modified process.



Compliance Audit

- Owner/operators are required to evaluate compliance at least every 3 years to verify procedures and practices are adequate and followed.
- Must be conducted by at least one person knowledgeable in the process and develop a report of the scope, methods, results and findings of the audit.
- San Joaquin Environmental Health Department requires recommendations to be completed within 1 year and if more time is needed a request for an extension must be submitted.

Compliance Audit

Response to compliance audit recommendations documentation:

- Action taken to address recommendations; and
- Actual completion dates of correction.

Retain the two most recent audits

Recommendations	Management Response	Assigned To	Date Complete
Update the alternative release scenario to a scenario that meets the requirements and the current process. Include any offsite consequences with the selected alternative release.	The alternative release scenario has been updated based on the site specific conditions and follow the alternative release parameters under CalARP. The offsite consequence analysis and air modeling documentation will be included in the 2019 RMP update. There are no public or environmental offsite consequences identified in the alternative release as they are defined by CalARP.	Jack Becker	2/8/2019
Update the alternative release scenario to a scenario that meets the requirements and the current process. Include any offsite consequences with the selected alternative release.	The alternative release scenario has been updated based on the site specific conditions and follow the alternative release parameters under CalARP. The offsite consequence analysis and air modeling documentation will be included in the 2019 RMP update. There are no public or environmental offsite consequences identified in the alternative release as they are defined by CalARP.	Jack Becker	2/8/2019
Include external events in the 2018 hazard review. Types of natural and human-caused external events to consider addressing: Sabotage (vandalism, terrorist, disgruntled employee); Fire (internal or external origin); Geology (Earthquake, landslide, erosion); Weather (Tornado or extreme wind, lightning, flooding, frost, fog); Impact (explosion, aircraft, train, vehicle or person). The Hazard Review conducted in 2019 will be included in the 2019 RMP update.	External events were considered in the Hazard Review conducted on 1/9/2019. The types of natural and human-caused external events considered include: Sabotage (vandalism, terrorist, disgruntled employee); Fire (internal or external origin); Geology (Earthquake, landslide, erosion); Weather (Tornado or extreme wind, lightning, flooding, frost, fog); Impact (explosion, aircraft, train, vehicle or person). The Hazard Review conducted in 2019 will be included in the 2019 RMP update.	Jack Becker	2/8/2019



Incident Investigation

An incident investigation must be initiated within 48 hours of a release or potential catastrophic release and conducted by a team knowledgeable in the process and with experience to analyze the incident. Include contractor if the incident involved the work of the contractor.

- Investigation report must include:
 - The date the investigation began
 - Detailed description of the incident including five-year accident history data from §2750.9(b)
 - List of recommendations or findings
- Contact San Joaquin County Environmental Health Department, if recommendations will take more than 1 year to implement. Recommendations must be completed within 1.5 years of the investigation report or 2 years from incident.
- Document the actual completion dates of recommendations.
- Retain incident investigation reports for five years.

Incident Investigation

Detailed description of the incident including five-year accident history data from §2750.9(b) Numerical estimates shall be provided to two significant digits.

- (1) Date, time, and approximate duration of the release;
- (2) Regulated substance(s) released;
- (3) Estimated quantity released in pounds
- (4) Five- or six-digit NAICS code that most closely corresponds to the process;
- (5) The type of release event and its source;
- (6) Weather conditions, if known;
- (7) Onsite impacts;
- (8) Known offsite impacts;
- (9) Initiating event and contributing factors if known;
- (10) Whether offsite responders were notified, if known; and,
- (11) Operational or process changes that resulted from investigation of the release at the time of five-year accident history reporting



Employee Participation

- Developed a written plan of action regarding the implementation of employee participation of CalARP elements. The written plan should include:
 - Obtaining employee input
 - Reviewing employee input
 - Dissemination of information back to employees
- Consult with employees on the conduct and development of PHA and other CalARP elements.
- Provide employees access to PHAs and all other information required to be developed under CalARP.

Hot Work Permit

- Hot work permit must be issued for hot work conducted on or near a covered process.
- Permit should document the following prior to beginning hot work:
 - Fire prevention and protection requirements of CalOSHA Title 8, §5189, §4848 and §6777
 - Date of work authorized
 - The object on which hot work is performed
 - LOTO
 - Line Break Permit
 - PPE
- Permit must be kept on file until completion of work or longer if specified in the company policy.



Contractors

- Applies only to work conducted by contractors on or adjacent to a covered process.
- This does not apply to contractors that provide incidental services that do not influence process safety.
- Owner/operator and contractors both have responsibilities to fulfill.

Contractors

Owner/operator responsibilities:

- Evaluate contractor's safety performance and programs when selecting a contractor
- Inform the contractor of known potential hazards related to the contractor's work and the process (fire, explosion or toxic release)
- Implement safe work practices to control the entrance, presence and exit of contract employees (may include lockout/tagout, confined space entry, line break and site access by employees and contractors)
- Periodically document the evaluation of the performance of the contractor in fulfilling their responsibilities

Contractors

Contractor responsibilities for each contract employee:

- Assure they are trained in work practice to perform their job safely
- Assure they are instructed in the known potential hazards related to the work and the process (fire, explosion or toxic release) and the Emergency Action Plan
- Document the identity, date of training, and means used to verify that they understood the training
- Assure contract employees follow the safe work practices and procedures of the owner/operator
- Advise the owner/operator of any hazards found or unique hazards presented by the contractor's work

Summary

CalARP Program 2 and Program 3 Prevention Programs

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Thank you

Contact Information

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