CITY OF AUSTIN, TEXAS

Purchasing Office

REQUEST FOR PROPOSAL (RFP)

OFFER SHEET

SOLICITATION NO: CAK0006

DATE ISSUED: June 13, 2016

REQUISITION NO.: 16051600457

COMMODITY CODE: 96223

COMMODITY/SERVICE DESCRIPTION: Specialty Chemical Water Treatment Services

PRE-PROPOSAL CONFERENCE TIME AND DATE:
June 23, 2016 at 12:30 PM
Non-mandatory; included below is the call-in information: USA TollFree: (877) 402-9753, ACCESS CODE: 2182020

LOCATION: 8003 Decker Lane, Bldg 6, Austin, TX 78726

PROPOSAL DUE PRIOR TO: July 12, 2016 at 2:00 PM

PROPOSAL CLOSING TIME AND DATE: July 12, 2016 at 2:00 PM

LOCATION: MUNICIPAL BUILDING, 124 W 8th STREET
RM 308, AUSTIN, TEXAS 78701

LIVE SOLICITATION CLOSING ONLINE: For RFP's, only the names of respondents will be read aloud

For information on how to attend the Solicitation Closing online, please select this link:

http://www.austintexas.gov/department/bid-opening-webinars

FOR CONTRACTUAL AND TECHNICAL ISSUES CONTACT THE FOLLOWING AUTHORIZED CONTACT PERSON:

Cheryl A Kaufman
Senior Buyer

Phone: (512) 505-3545
E-Mail: Cheryl.Kaufman@austinenergy.com

Terry Nicholson
Senior Buyer Supervisor

Phone: (512) 322-6586
E-Mail: Terry.Nicholson@austinenergy.com

When submitting a sealed Offer and/or Compliance Plan, use the proper address for the type of service desired, as shown below:

Address for US Mail (Only)	**Address for Fedex, UPS, Hand Delivery or Courier Service**
City of Austin	City of Austin, Municipal Building
Purchasing Office-Response Enclosed for Solicitation # CAK0006	Purchasing Office-Response Enclosed for Solicitation # CAK0006
P.O. Box 1088	124 W 8th Street, Rm 308
Austin, Texas 78767-8845	Austin, Texas 78701
	Reception Phone: (512) 974-2500

NOTE: Offers must be received and time stamped in the Purchasing Office prior to the Due Date and Time. It is the responsibility of the Offeror to ensure that their Offer arrives at the receptionist's desk in the Purchasing Office prior to the time and date indicated. Arrival at the City's mailroom, mail terminal, or post office box will not constitute the Offer arriving on time. See Section 0200 for additional solicitation instructions.

All Offers (including Compliance Plans) that are not submitted in a sealed envelope or container will not be considered.

SUBMIT 1 ORIGINAL, 4 COPIES, AND 1 COMPLETE ELECTRONIC COPY OF YOUR RESPONSE

*****SIGNATURE FOR SUBMITTAL REQUIRED ON PAGE 3 OF THIS DOCUMENT*****

This solicitation is comprised of the following required sections. Please ensure to carefully read each section including those incorporated by reference. By signing this document, you are agreeing to all the items contained herein and will be bound to all terms.

SECTION NO.	TITLE	PAGES
0100	STANDARD PURCHASE DEFINITIONS	*
0200	STANDARD SOLICITATION INSTRUCTIONS	*
0300	STANDARD PURCHASE TERMS AND CONDITIONS	*
0400	SUPPLEMENTAL PURCHASE PROVISIONS	12
0500	SCOPE OF WORK	4
0500-A	ATTACHMENT A- Specialty Chemical Locations and Systems Information	2
ATT 1	Confined Space Guidelines- for reference	59
ATT 2	Fall Protection Program- for reference	16
ATT 3	PPE Guidelines- for reference	28
ATT 4	Hot Work Guidelines- for reference	20
0600	PROPOSAL PREPARATION INSTRUCTIONS & EVALUATION FACTORS	4
0600.1	COST PROPOSAL- Complete and return- **INCLUDE ADDITIONAL PAGES**	3
0605	LOCAL BUSINESS PRESENCE IDENTIFICATION FORM – Complete and return	2
0700	REFERENCE SHEET – Complete and return if required	1
0800	NON-DISCRIMINATION CERTIFICATION	*
0805	NON-SUSPENSION OR DEBARMENT CERTIFICATION	*
0810	NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING CERTIFICATION	*
0815	LIVING WAGES CONTRACTOR CERTIFICATION–Complete and return	1
0835	NONRESIDENT BIDDER PROVISIONS – Complete and return	1
0900	MBE/WBE PROCUREMENT PROGRAM PACKAGE NO GOALS FORM – Complete & return	2

*** Documents are hereby incorporated into this Solicitation by reference, with the same force and effect as if they were incorporated in full text. The full text versions of the * Sections are available on the Internet at the following online address:**

http://www.austintexas.gov/financeonline/vendor_connection/index.cfm#STANDARDBIDDOCUMENTS

If you do not have access to the Internet, you may obtain a copy of these Sections from the City of Austin Purchasing Office located in the Municipal Building, 124 West 8th Street, Room #308 Austin, Texas 78701; phone (512) 974-2500. Please have the Solicitation number available so that the staff can select the proper documents. These documents can be mailed, expressed mailed, or faxed to you.

INTERESTED PARTIES DISCLOSURE

In addition, Section 2252.908 of the Texas Government Code requires the successful offeror to complete a Form 1295 "Certificate of Interested Parties" that is signed and notarized for a contract award requiring council authorization. The "Certificate of Interested Parties" form must be completed on the

Texas Ethics Commission website, printed, signed and submitted to the City by the authorized agent of the Business Entity with acknowledgment that disclosure is made under oath and under penalty of perjury prior to final contract execution.

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

The undersigned, by his/her signature, represents that he/she is submitting a binding offer and is authorized to bind the respondent to fully comply with the solicitation document contained herein. The Respondent, by submitting and signing below, acknowledges that he/she has received and read the entire document packet sections defined above including all documents incorporated by reference, and agrees to be bound by the terms therein.

Company Name: _____

Company Address: _____

City, State, Zip: _____

Federal Tax ID No. _____

Printed Name of Officer or Authorized Representative: _____

Title: _____

Signature of Officer or Authorized Representative: _____

Date: _____

Email Address: _____

Phone Number: _____

*** Proposal response must be submitted with this Offer sheet to be considered for award**

Section 0605: Local Business Presence Identification

A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years, currently employs residents of the City of Austin, Texas, and will use employees that reside in the City of Austin, Texas, to support this Contract. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation.

OFFEROR MUST SUBMIT THE FOLLOWING INFORMATION FOR EACH LOCAL BUSINESS (INCLUDING THE OFFEROR, IF APPLICABLE) TO BE CONSIDERED FOR LOCAL PRESENCE.

NOTE: ALL FIRMS MUST BE IDENTIFIED ON THE MBE/WBE COMPLIANCE PLAN OR NO GOALS UTILIZATION PLAN (REFERENCE SECTION 0900).

USE ADDITIONAL PAGES AS NECESSARY

OFFEROR:

Name of Local Firm		
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
or		
Has your branch office been located in the Corporate City Limits for the last 5 years?		
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm		
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
or		
Has your branch office been located in the Corporate City Limits for the last 5 years	Yes	No

Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm		
Physical Address		
Is your headquarters located in the Corporate City Limits? (circle one)	Yes	No
or		
Has your branch office been located in the Corporate City Limits for the last 5 years	Yes	No
Will your business be providing additional economic development opportunities created by the contract award? (e.g., hiring, or employing residents of the City of Austin or increasing tax revenue?)	Yes	No

Section 0700: Reference Sheet

Responding Company Name _____

The City at its discretion may check references in order to determine the Offeror's experience and ability to provide the products and/or services described in this Solicitation. The Offeror shall furnish at least 3 complete and verifiable references. References shall consist of customers to whom the offeror has provided the same or similar services within the last 5 years. References shall indicate a record of positive past performance.

1. Company's Name _____

   Name and Title of Contact _____

   Project Name _____

   Present Address _____

   City, State, Zip Code _____

   Telephone Number (_____)_____ Fax Number (_____)_____

   Email Address _____

2. Company's Name _____

   Name and Title of Contact _____

   Project Name _____

   Present Address _____

   City, State, Zip Code _____

   Telephone Number (_____)_____ Fax Number (_____)_____

   Email Address _____

3. Company's Name _____

   Name and Title of Contact _____

   Project Name _____

   Present Address _____

   City, State, Zip Code _____

   Telephone Number (_____)_____ Fax Number (_____)_____

   Email Address _____

Section 0815: Living Wages Contractor Certification

Company Name _____

Pursuant to the Living Wages provision (reference Section 0400, Supplemental Purchase Provisions) the Contractor is required to pay to all employees directly assigned to this City contract a minimum Living Wage equal to or greater than $13.03 per hour.

The below listed employees of the Contractor who are directly assigned to this contract are compensated at wage rates equal to or greater than $13.03 per hour.

Employee Name	Employee Job Title

USE ADDITIONAL PAGES AS NECESSARY

(1) All future employees assigned to this Contract will be paid a minimum Living Wage equal to or greater than $13.03 per hour.

(2) Our firm will not retaliate against any employee claiming non-compliance with the Living Wage provision.

A Contractor who violates this Living Wage provision shall pay each affected employee the amount of the deficiency for each day the violation continues. Willful or repeated violations of the provision or fraudulent statements made on this certification may result in termination of this Contract for Cause and subject the firm to possible suspension or debarment, or result in legal action.

Section 0835: Non-Resident Bidder Provisions

Company Name _____

A. Bidder must answer the following questions in accordance with Vernon's Texas Statues and Codes Annotated Government Code 2252.002, as amended:

   Is the Bidder that is making and submitting this Bid a "Resident Bidder" or a "non-resident Bidder"?

   Answer: _____

   (1) Texas Resident Bidder- A Bidder whose principle place of business is in Texas and includes a Contractor whose ultimate parent company or majority owner has its principal place of business in Texas.
   (2) Nonresident Bidder- A Bidder who is not a Texas Resident Bidder.

B. If the Bidder id a "Nonresident Bidder" does the state, in which the Nonresident Bidder's principal place of business is located, have a law requiring a Nonresident Bidder of that state to bid a certain amount or percentage under the Bid of a Resident Bidder of that state in order for the nonresident Bidder of that state to be awarded a Contract on such bid in said state?

   Answer: _____ Which State: _____

C. If the answer to Question B is "yes", then what amount or percentage must a Texas Resident Bidder bid under the bid price of a Resident Bidder of that state in order to be awarded a Contract on such bid in said state?

   Answer: _____

Section 0900: Minority- and Women-Owned Business Enterprise (MBE/WBE) Procurement Program No Goals Form

SOLICITATION NUMBER:
PROJECT NAME:

The City of Austin has determined that no goals are appropriate for this project. Even though goals were not assigned for this solicitation, the Bidder/Proposer is required to comply with the City's MBE/WBE Procurement Program, if areas of subcontracting are identified.

If any service is needed to perform the Contract and the Bidder/Proposer does not perform the service with its own workforce or if supplies or materials are required and the Bidder/Proposer does not have the supplies or materials in its inventory, the Bidder/Proposer shall contact the Small and Minority Business Resources Department (SMBR) at (512) 974-7600 to obtain a list of MBE and WBE firms available to perform the service or provide the supplies or materials. The Bidder/Proposer must also make a Good Faith Effort to use available MBE and WBE firms. Good Faith Efforts include but are not limited to contacting the listed MBE and WBE firms to solicit their interest in performing on the Contract, using MBE and WBE firms that have shown an interest, meet qualifications, and are competitive in the market; and documenting the results of the contacts.

Will subcontractors or sub-consultants or suppliers be used to perform portions of this Contract?

No	_____	**If no, please sign the No Goals Form and submit it with your Bid/Proposal in a sealed envelope**
Yes	_____	**If yes, please contact SMBR to obtain further instructions and an availability list and perform Good Faith Efforts. Complete and submit the No Goals Form and the No Goals Utilization Plan with your Bid/Proposal in a sealed envelope.**

After Contract award, if your firm subcontracts any portion of the Contract, it is a requirement to complete Good Faith Efforts and the No Goals Utilization Plan, listing any subcontractor, sub-consultant, or supplier. Return the completed Plan to the Project Manager or the Contract Manager.

I understand that even though goals were not assigned, I must comply with the City's MBE/WBE Procurement Program if subcontracting areas are identified. I agree that this No Goals Form and No Goals Utilization Plan shall become a part of my Contract with the City of Austin.	
Company Name	
Name and Title of Authorized Representative (Print or Type)	
Signature	**Date**

Minority- and Women-Owned Business Enterprise (MBE/WBE) Procurement Program No Goals Utilization Plan *(Please duplicate as needed)*

SOLICITATION NUMBER:
PROJECT NAME:

PRIME CONTRACTOR / CONSULTANT COMPANY INFORMATION

Name of Contractor/Consultant			
Address			
City, State Zip			
Phone Number		Fax Number	
Name of Contact Person			
Is Company City certified?	Yes ☐ No ☐ MBE ☐ WBE ☐ MBE/WBE Joint Venture ☐		

I certify that the information included in this No Goals Utilization Plan is true and complete to the best of my knowledge and belief. I further understand and agree that the information in this document shall become part of my Contract with the City of Austin.

Name and Title of Authorized Representative (Print or Type)

Signature **Date**

Provide a list of all proposed subcontractors / sub-consultants / suppliers that will be used in the performance of this Contract. **Attach Good Faith Effort documentation if non MBE/WBE firms will be used.**

Sub-Contractor / Sub-Consultant			
City of Austin Certified	MBE ☐ WBE ☐ Ethics / Gender Code: ☐ Non-Certified		
Vendor ID Code			
Contact Person		Phone Number	
Amount of Subcontract	$		
List commodity codes & description of services			

Sub-Contractor / Sub-Consultant			
City of Austin Certified	MBE ☐ WBE ☐ Ethics / Gender Code: ☐ Non-Certified		
Vendor ID Code			
Contact Person		Phone Number	
Amount of Subcontract	$		
List commodity codes & description of services			

FOR SMALL AND MINORITY BUSINESS RESOURCES DEPARTMENT USE ONLY:

Having reviewed this plan, I acknowledge that the proposer (HAS) or (HAS NOT) complied with City Code Chapter 2-9A/B/C/D, as amended.

Reviewing Counselor _____ **Date** _____ **Director/Deputy Director** _____ **Date** _____

CITY OF AUSTIN
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SPECIALTY CHEMICAL WATER TREATMENT SERVICES FOR
AUSTIN ENERGY AND OTHER CITY DEPARTMENTS
SOLICITATION NUMBER: CAK0006

1. **PROPOSAL FORMAT**

Prefacing the proposal, the Proposer shall provide an Executive Summary, which gives in brief, concise terms, a summation of the proposal. The proposal itself shall be organized in the following format and informational sequence:

A. **Business Organization**: State full name and address of your organization and identify parent company if you are a subsidiary. Specify the branch office or other subordinate element which will perform, or assist in performing, work herein. Indicate whether you operate as a partnership, corporation, or individual. Include the State in which incorporated or licensed to operate.

B. **Authorized Negotiator**: Include name, address, email address, and telephone number of person in your organization authorized to negotiate Contract terms and render binding decisions on Contract matters.

C. **Cost Proposal**: Complete Section 0600.1, Cost Proposal Sheet with the summary costs associated with the proposed technical solution and program. Include additional pages within the bid response with the following detailed information per work site listed in Tables 1 and 2 of Section 0500:

1. Proposed Chemicals per 1000 gallons of water treated for each work site.
2. Proposed Aqueous Ammonia per 1000 gallons of water treated for each work site.
3. Proposed “full service” and what that entails per 1000 gallons of water treated at each work site.
4. Proposed cooling tower equipment, chemicals, and full service per 1000 gallons of water treated at each work site as applicable.
5. Proposed closed cooling loops equipment, chemicals, and full service per 1000 gallons of water treated for each work site as applicable.
6. Proposed equipment rental costs per site needed to apply chemicals (this is for equipment NOT currently in place; equipment mark-up percentage cap will apply)
7. Proposed Sonar application per work site, as applicable, based on an application rate of ninety (90) "buckets" at forty pounds per bucket.

D. **Technical Solution & Program**: Detail your understanding of the requirement presented in the Scope of Work (Section 0500) of the solicitation and your solution/plan to accomplish the work. Describe your technical plan for accomplishing required work. Include:

1. Your plan for providing quality services to multiple City departments and locations. Include “full service” technical support and what your definition of “full service” entails per 1000 gallons of treated water.
2. Describe your water treatment services plan for each site listed, including all necessary chemicals, equipment, and technical support required to achieve optimal water quality. Include a Safety Data Sheets (SDS) for each chemical listed in your proposed solution.
3. Explain how your recommendations include component make up, such as, type of reverse osmosis membrane, type of Ultrafiltration membrane, system metallurgy etc. for the cooling water systems
4. Describe your procedures and protocols for testing the effectiveness of the chemical treatment systems, including the frequency of testing for each site.
5. Discuss your plan for ensuring that each chemical for proposed use will be in compliance with the environmental permits of the end use location.

6. Provide a statement of your compliance with all applicable rules and regulations of Federal, State and Local governing entities.
7. Describe your ability to respond to emergency service requests, including your average response time to be on-site.
8. Austin Energy will not pay separate charges for freight. All chemicals, equipment, and other apparatus shall be billed FOB (Free On Board) to the destination location.

E. **Experience & Performance Capability**: A minimum of five (5) years of experience providing specialty chemical water treatment services to large scale industrial customers (power plants or similar industrial facilities), including developing water treatment plans for commercial/industrial clients that optimize manufacturing/power production performance through water quality improvements is required under this solicitation.

1. Describe your experience related to performing the work specified in this solicitation.
2. Provide a completed OSHA Form 300A, Log of Work Related Injuries and Illnesses, for the last three (3) calendar years.
3. Provide a list of five (5) references, including any City of Austin departments that you have or are providing similar services to.
4. Provide a list of any law suit, litigation or claim made against your organization within the last 10 years.
5. Provide Resumes for any personnel who will be involved with this project.

F. **Personnel**: Include names and qualifications of all professional personnel who will be assigned to this project. State the primary work assigned to each person and the percentage of time each person will devote to this work. Identify key persons by name and title. **Provide resumes** for personnel who will be assigned to a resulting contract.

G. **Project Management Structure**: Provide a general explanation and chart which specifies project leadership and reporting responsibilities; and interface the team with City project management and team personnel. If use of subcontractors is proposed, identify their placement in the primary management structure, and provide internal management description for each subcontractor.

I. **Exceptions**: Be advised that exceptions to any portion of the Solicitation may jeopardize acceptance of the Proposal.

The terms and conditions stated in this RFP shall constitute the terms and conditions of the final contract with the successful Proposer after award. If any exceptions are taken by a Proposer to any term or condition of this RFP, the Proposer must clearly indicate each specific exception taken, include a full explanation of the reason for said exception, and include any proposed language for any alternative term as a separate attachment to the Proposal, stating clearly in writing that the Proposer's Contract or Legal staff have reviewed and proposed all such terms in the Proposer's exceptions. Proposer must also certify in their proposal, that its authorized agents have reviewed all terms and conditions of the RFP, and, except for any exceptions, have authority to bind Proposer to comply with all of the City of Austin's terms and conditions. The failure to identify exceptions or proposed changes with a full explanation and substitute language shall constitute acceptance by the Proposer of the Solicitation as proposed by the City.

The City reserves the right to reject a proposal containing exceptions, additions, qualifications or conditions not called for in the Solicitation. Additionally, all exceptions or supplemental terms and conditions proposed by a Proposer in response to any portion of this RFP but not submitted at the time

required for submitting of the Initial Proposal (i.e., the specified RFP closing date and time listed on the cover sheet of the Solicitation) may be rejected at the sole discretion of the City.

2. **ADDITIONAL PROPOSAL TERMS**

A. **Local Business Presence**: The City seeks opportunities for businesses in the Austin Corporate City Limits to participate on City contracts. A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years, currently employs residents of the City of Austin, Texas, and will use employees that reside in the City of Austin, Texas, to support this contract. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation. Points will be awarded through a combination of the Offeror's Local Business Presence and/or the Local Business Presence of their subcontractors. Evaluation of the Team's Percentage of Local Business Presence will be based on the dollar amount of work as reflected in the Offeror's MBE/WBE Compliance Plan or MBE/WBE Utilization Plan. Specify if and by which definition the Offeror or Subcontractor(s) have a local business presence.

B. **Proposal Acceptance Period**: All proposals are valid for a period of one hundred and twenty (120) calendar days subsequent to the RFP closing date unless a longer acceptance period is offered in the proposal.

C. **Proprietary Information**: All material submitted to the City becomes public property and is subject to the Texas Open Records Act upon receipt. If a Proposer does not desire proprietary information in the proposal to be disclosed, each page must be identified and marked proprietary at time of submittal. The City will, to the extent allowed by law, endeavor to protect such information from disclosure. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General. Failure to identify proprietary information will result in all unmarked sections being deemed non-proprietary and available upon public request.

D. **Proposal Preparation Costs**: All costs directly or indirectly related to preparation of a response to the RFP or any oral presentation required to supplement and/or clarify a proposal which may be required by the City shall be the sole responsibility of the Proposer.

3. **EVALUATION FACTORS AND AWARD**

A. **Competitive Selection**: This procurement will comply with applicable City Policy. The successful Proposer will be selected by the City on a rational basis. Evaluation factors outlined in Paragraph B below shall be applied to all eligible, responsive Proposers in comparing proposals and selecting the Best Offeror. Award of a Contract may be made without discussion with Proposers after proposals are received. Proposals should, therefore, be submitted on the most favorable terms.

B. **Evaluation Factors**:

i. 100 points.

a. Technical Solution and Program (reference 1D) – 30 points

b. Experience & Performance Capability (reference 1E) – 20 points

c. Cost Proposal (reference 1C) – 30 points

d. Percent mark-up on materials and equipment purchases (reference 1C-4)- 10 points

e. Local Business Presence (reference 2A) – 10 points

Team's Local Business Presence	Points Awarded
Local business presence of 90% to 100%	10
Local business presence of 75% to 89%	8
Local business presence of 50% to 74%	6
Local business presence of 25% to 49%	4
Local presence of between 1 and 24%	2
No local presence	0

ii. Interviews, Optional. Interviews may be conducted at the discretion of the City. The City will score proposals based on the items listed above. The City may select a "short list" of Proposers based on those scores. Short listed Proposers may be invited for interviews with the City. The City reserves the right to negotiate the actual contract scope of work and cost after submission.

COST PROPOSAL
CITY OF AUSTIN
SPECIALTY CHEMICAL WATER TREATMENT SERVICES FOR
AUSTIN ENERGY AND OTHER CITY DEPARTMENTS

SOLICITATION NO.: CAK0006

The estimate shall not include a separate charge for administrative, overhead, per diem and transportation (i.e. travel time, mileage, and fuel) costs. These expenses shall be included in the hourly rates and shall not be paid separately (Section 0400)

A bid of '0' (zero) will be interpreted by the City as a no-charge (free) item and the City will not expect to pay for that item. A bid of 'no bid' will be interpreted by the City that the responder does not wish to bid on that item.

Failure to respond to all sections of this Bid Sheet may result in the disqualification of the bidder's bid. Include additional pages within the bid response detailing chemical information and pricing per each work site listed in Tables 1 and 2 of Section 0500.

ITEM NO.	SECTION 1 - CHEMICALS	$/1000 gallons	$/1,000,000 gallons	$/year (12-months) estimate
1	Total Costs for AE sites			
2	Total Costs for all other City Department sites			
ITEM NO.	**SECTION 2 - AQUEOUS AMMONIA**	**$/1000 gallons**	**$/1,000,000 gallons**	**$/year (12-months) estimate**
1	Total Costs for AE sites			
2	Total Costs for all other City Department sites			
ITEM NO.	**SECTION 3 - FULL SERVICE**	**$/1000 gallons**	**$/1,000,000 gallons**	**$/year (12-months) estimate**
1	Total Costs for AE sites			
2	Total Costs for all other City Department sites			

ITEM NO.	SECTION 4 - COOLING TOWERS COSTS	$/1000 gallons	$/1,000,000 gallons	$/year (12-months) estimate
1	Total Costs for AE sites			
2	Total Costs for all other City Department sites			

ITEM NO.	SECTION 5 - CLOSED COOLING LOOPS	$/1000 gallons	$/1,000,000 gallons	$/year (12-months) estimate
1	Total Costs for AE sites			
2	Total Costs for all other City Department sites			

ITEM NO.	SECTION 6 - EQUIPMENT RENTAL	$/1000 gallons	$/1,000,000 gallons	$/year (12-months) estimate
1	Total Costs for AE sites			
2	Total Costs for all other City Department sites			

ITEM NO.	SECTION 7 - SONAR	$/bucket	$/buckets needed per site	$/year (12-months) estimate
1	Total Costs for AE sites			
2	Total Costs for all other City Department sites			

SECTION 8 - EMERGENCY SERVICES

ITEM NO.	ITEM DESCRIPTION	ESTIMATED ANNUAL QUANTITY	UNIT PRICE (EACH)	EXTENDED PRICE
	Flat fee for response to Emergency Services, to be made as specified in the Scope of Work after the time the service is requested.	100 Hours		
			TOTAL EXTENDED PRICE FOR SECTIONS 1 THRU 8	

SECTION 9 - MARK-UP PERCENTAGE TO COSTS

- The percentage mark-up caps shall be fixed throughout the term of the Contract, including any subsequent renewal periods, and are not subject to increase or re-negotiation.
- Requests for Equipment purchases for individual/combined items quoted at $50,000.00 or more shall be reviewed by Purchasing and may be subject to competitive bid.

ITEM NO.	ITEM DESCRIPTION	ESTIMATED ANNUAL EXPENDITURE	MARKUP TO COSTS (PERCENTAGE)	EXTENDED PRICE
	Mark-up to cost for third-party Equipment Rental			
	Mark-up to cost for Equipment Purchases			
	Mark-up to cost for Materials Purchases			

SECTION 10 - ADDITIONAL LABOR

- The City of Austin/AE reserves the right to request additional labor as necessary. Please provide information for labor costs that could apply under various water-treatment/solutions services. **The information provided in this section will not be included in the criteria for Cost Proposal**.

ITEM NO.	ADDITIONAL LABOR SERVICES OFFERED (Add additional pages as necessary)	ESTIMATED ANNUAL HOURS	HOURLY RATE	EXTENDED PRICE
13	Labor Classification			
14	Labor Classification			
15	Labor Classification			
16	Labor Classification			

COMPANY NAME:
PRINTED NAME:
EMAIL ADDRESS:

CITY OF AUSTIN
PURCHASING OFFICE
SPECIALTY CHEMICAL WATER TREATMENT SERVICES
SUPPLEMENTAL PURCHASE PROVISIONS
SOLICITATION: CAK0006

The following Supplemental Purchasing Provisions apply to this solicitation:

1. **EXPLANATIONS OR CLARIFICATIONS:** (reference paragraph 5 in Section 0200)

   All requests for explanations or clarifications must be submitted in writing to the Purchasing Office by June 27, 2016 at 10:00 AM.

2. **INSURANCE:** Insurance is required for this solicitation.

   A. **General Requirements:** See Section 0300, Standard Purchase Terms and Conditions, paragraph 32, entitled Insurance, for general insurance requirements.

      i. The Contractor shall provide a Certificate of Insurance as verification of coverages required below to the City at the below address prior to contract execution and within 14 calendar days after written request from the City. Failure to provide the required Certificate of Insurance may subject the Offer to disqualification from consideration for award

      ii. The Contractor shall not commence work until the required insurance is obtained and until such insurance has been reviewed by the City. Approval of insurance by the City shall not relieve or decrease the liability of the Contractor hereunder and shall not be construed to be a limitation of liability on the part of the Contractor.

      iii. The Contractor must also forward a Certificate of Insurance to the City whenever a previously identified policy period has expired, or an extension option or holdover period is exercised, as verification of continuing coverage.

      iv. The Certificate of Insurance, and updates, shall be mailed to the following address:

      City of Austin Purchasing Office
      (REFERENCE CONTRACT NAME AND MA NUMBER)
      P. O. Box 1088
      Austin, Texas 78767

   B. **Specific Coverage Requirements:** The Contractor shall at a minimum carry insurance in the types and amounts indicated below for the duration of the Contract, including extension options and hold over periods, and during any warranty period. These insurance coverages are required minimums and are not intended to limit the responsibility or liability of the Contractor.

      i. **Worker's Compensation and Employers' Liability Insurance:** Coverage shall be consistent with statutory benefits outlined in the Texas Worker's Compensation Act (Section 401). The minimum policy limits for Employer's Liability are $100,000 bodily injury each accident, $500,000 bodily injury by disease policy limit and $100,000 bodily injury by disease each employee.

         (1) The Contractor's policy shall apply to the State of Texas and **include these endorsements in favor of the City of Austin**:

            (a) Waiver of Subrogation, Form WC420304, or equivalent coverage

            (b) **Thirty (30) days Notice of Cancellation**, Form WC420601, or equivalent coverage

      ii. **Commercial General Liability Insurance:** The minimum bodily injury and property damage per occurrence are $1,000,000 for coverages A (Bodily Injury and Property Damage) and B (Personal and Advertising Injury).

         (1) The policy shall contain the following provisions:

            (a) Contractual liability coverage for liability assumed under the Contract and all other Contracts related to the project.

            (b) Contractor/Subcontracted Work.

(c) Products/Completed Operations Liability for the duration of the warranty period.

(d) If the project involves digging or drilling provisions must be included that provide Explosion, Collapse, and/or Underground Coverage.

(2) **The policy shall also include these endorsements in favor of the City of Austin**:

(a) Waiver of Subrogation, Endorsement CG 2404, or equivalent coverage

(b) **Thirty (30) days Notice of Cancellation,** Endorsement CG 0205, or equivalent coverage

(c) The City of Austin listed as an additional insured, Endorsement CG 2010, or equivalent coverage

iii. **Business Automobile Liability Insurance:** The Contractor shall provide coverage for all owned, non-owned and hired vehicles with a minimum combined single limit of $1,000,000 per occurrence for bodily injury and property damage. Alternate acceptable limits are $250,000 bodily injury per person, $500,000 bodily injury per occurrence and at least $100,000 property damage liability per accident.

(1) The policy shall include these endorsements in favor of the City of Austin:

(a) Waiver of Subrogation, Endorsement CA0444, or equivalent coverage

(b) **Thirty (30) days notice of Cancellation**, Endorsement CA0244, or equivalent coverage

(c) The City of Austin listed as an additional insured, Endorsement CA2048, or equivalent coverage.

iv. **Environmental Impairment Liability Insurance**: The Contractor shall provide a minimum of $1,000,000 per claim to pay on behalf of the insured all sums which the insured shall become legally obligated to pay as damages by reason of sudden accidental or non-sudden and accidental pollution arising out of transportation, storage, or permanent disposal of hazardous and non-hazardous wastes.

C. **Endorsements:** The specific insurance coverage endorsements specified above, or their equivalents must be provided. In the event that endorsements, which are the equivalent of the required coverage, are proposed to be substituted for the required coverage, copies of the equivalent endorsements must be provided for the City's review and approval.

D. **Certificate**: The following statement must be shown on the Certificate of Insurance.
The City of Austin is an Additional Insured on the general liability and the auto liability policies. A Waiver of Subrogation is issued in favor of the City of Austin for general liability, auto liability and workers compensation policies.

3. **PAYMENT BOND: (May also include a Bid / Proposal / Response Bond / Guaranty – see paragraph 5 above)**

A. If sub-contracting is anticipated the Contractor shall provide a Payment Bond in an amount equal to five (5)% of the annual Contract amount within thirty (30) calendar days after notification of award. The Payment Bond serves as security for the faithful payment of all of the Contractor's obligations for subcontracts, work, labor, equipment, supplies, and materials furnished under the Contract. The Payment Bond shall be issued by a solvent company authorized to do business in the State of Texas, and shall meet any other requirements established by law or by the City pursuant to applicable law. The Surety must obtain reinsurance for any portion of the risk that exceeds 10% of the Surety's capital and surplus. For bonds exceeding $100,000, the Surety must also hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a reinsurer that is authorized as a reinsurer in Texas and holds a certificate of authority from the U.S. Secretary of the Treasury.

B. The Payment Bond shall remain in effect throughout the term of the Contract, and shall be renewed for each respective extension

4. **PERFORMANCE BOND: (Must also include a Bid / Proposal / Response Guaranty / Bond – see paragraph 5 above)**

A. The Contractor shall provide a Performance Bond in an amount equal to five (5)% of the annual Contract amount within fourteen (14) calendar days after notification of award. The Performance Bond serves as security for the faithful performance of all of the Contractor's obligations under the Contract. The Performance Bond shall be issued by a solvent company authorized to do business in the State of Texas, and shall meet any other requirements established by law or by the City pursuant to applicable law. The Surety must obtain reinsurance for any portion of the risk that exceeds 10% of the Surety's capital and surplus. For bonds exceeding $100,000, the Surety must also hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a reinsurer that is authorized as a reinsurer in Texas and holds a certificate of authority from the U.S. Secretary of the Treasury.

B. The Performance Bond shall remain in effect throughout the term of the Contract and shall be renewed for each respective extension.

5. **TERM OF CONTRACT:**

A. The Contract shall be in effect for an initial term of 24 months and may be extended thereafter for up to two (2) additional 24-month periods, subject to the approval of the Contractor and the City Purchasing Officer or his designee.

B. Upon expiration of the initial term or period of extension, the Contractor agrees to hold over under the terms and conditions of this agreement for such a period of time as is reasonably necessary to re-solicit and/or complete the project (not to exceed 120 days unless mutually agreed on in writing).

C. Upon written notice to the Contractor from the City's Purchasing Officer or his designee and acceptance of the Contractor, the term of this contract shall be extended on the same terms and conditions for an additional period as indicated in paragraph A above.

D. Prices are firm and fixed for the first 24 months. Thereafter, price changes are subject to the Economic Price Adjustment provisions of this Contract.

6. **QUANTITIES:** There are no minimum order quantities expected in a resulting contract. . Quantities will be as needed and specified by the City for each order. The City reserves the right to purchase more or less of –the proposed quantities as may be required during the Contract term.

7. **DELIVERY REQUIREMENTS:**

Location:	Days:
Various City of Austin Locations – See Tables 1 and 2	**As Required – See Tables 1 and 2**

A. Delivery is to be made within fourteen (14) calendar days after the order is placed (either verbally or in writing). All orders must be shipped complete unless arrangements for partial shipments are made in advance.

B. The Contractor shall provide, with each delivery, a Shipping or Delivery Ticket showing the description of each item, quantity, and unit price.

C. The Contractor shall confirm the quantity to be shipped on all orders within two (2) hours of notification by phone from the City.

D. Unless requested by the City, deliveries shall not be made on City-recognized legal holidays (see paragraph 51 in Section 0300).

8. **INVOICES and PAYMENT:** (reference paragraphs 12 and 13 in Section 0300)

A. Invoices shall reference the resulting contract number, contain a unique invoice number and the information required in Section 0300, paragraph 12, entitled "Invoices." Invoices received without all required information cannot be processed and will be returned to the vendor.

Invoices shall be mailed or emailed to the AE Project Manager and the specific work-site Project Manager as listed below:

AE Project Manager
Fred Velarde
8003 Decker Lane
Austin, Texas 78724-3015
fred.velarde@austinenergy.com
512-505-7315

District Chilling Plant (DCP) 1
300 San Antonio Street,
Austin, Texas 78701
Armando Armengol, Superintendent
armando.armengol@austinenergy.com
512-505-3868

District Chilling Plant (DCP) 2,
410 Sabine Street, Austin, Texas 78701
Armando Armengol, Superintendent
armando.armengol@austinenergy.com
512-505-3868

Domain Chilling Plant (DCP)
3120 Kramer Lane,
Austin, Texas 78758
Whitney Moyer
whitney.moyer@austinenergy.com
512-505-7148

Mueller Energy Center (MEC)
4901 Lancaster Dr.
Austin, Texas 78723
Whitney Moyer
whitney.moyer@austinenergy.com
512-505-7148

Sand Hill Energy Center (SHEC)
1101 Fallwell Lane
Del Valle, Texas 78617
John Lalande
john.lalande@austinenergy.com
512-972-9456

Town Lake Center (TLC)
721 Barton Springs Rd.
Austin, Texas 78704

Renee Codina
renee.codina@austinenergy.com
512-974-0765

System Control Center
2500 Montopolis Dr.
Austin, Texas 78741
Renee Codina
renee.codina@austinenergy.com
512-974-0765

Combined Transportation Emergency Communication Center (CTECC)
5010 Old Manor Road
Austin, Texas 78723
Melody Connell
melody.connell@austinenergy.com
512-974-0766

Austin-Bergstrom International Airport (ABIA)
3400 Spirit of Texas Dr.
Austin, Texas 78719
Mike Robinson
mike.robinson@austintexas.gov
512-530-7504

Parks and Recreation (all locations)
Rigoberto Alvarez
rigoberto.alvarez@austintexas.gov
512-974-9538

Building Services (all locations)
David Ware
david.ware@austintexas.gov
512-974-6343

Palmer Events Center
900 Barton Springs Rd.
Austin, Texas 78704
Bryan Helford
bryan.helford@austintexas.gov
512-404-4311

Austin Convention Center
500 East Cesar Chavez St.
Austin, Texas 78701
Jerry Slabaugh
jerry.slabaugh@austintexas.gov
512-404-4310

B. The Contractor agrees to accept payment by either check or Electronic Funds Transfer (EFT) for all goods and/or services provided under the Contract. The Contractor shall factor the cost of processing credit card payments into the Offer. There shall be no additional charges, surcharges, or penalties to the City for payments made by credit card.

C. Reimbursement for material and equipment purchases will require a copy of the receipt of purchase to be attached to the invoice covering the time period that services were provided and the material(s) and/or equipment were purchased. The reimbursement amount will include Contractor's cost plus the approved mark-up amount in the resulting contract.

D. Neither the City of Austin nor Austin Energy will be obligated to pay invoices for services, materials, and equipment not covered by a resulting contract.

9. **TRAVEL EXPENSES**: Expenses for travel, lodging and per diem expenses in connection with the Contract will not be reimbursed directly. Contractor shall include these costs as a percentage of a service unit in Section 0600.1, Cost Proposal.

10. **LIQUIDATED DAMAGES:** Time is of the essence in the performance of the Contract; therefore, the Contractor shall strictly adhere to the Contract delivery schedule. No changes in the delivery schedule shall be effective unless in writing executed by both the City and the Contractor. The parties agree that if, due to no fault of the City, delivery of any material or performance of any service is delayed beyond the time specified in the Contract, the actual damages sustained by the City because of such delay will be uncertain and difficult to determine, and that the reasonable foreseeable damage incurred by the City is hereby stipulated to be $1,000.00 per calendar day. The Contractor therefore agrees to pay, and the City agrees to accept, as liquidated damages, the sum of $1,000.00 per calendar day for each calendar day of delay.

11. **HAZARDOUS MATERIALS:**

A. If this Solicitation involves hazardous materials, the Offeror shall furnish with the Offer Safety Data Sheets (SDS), (OSHA Form 20), on all chemicals and hazardous materials specifying the generic and trade name of product, product specification, and full hazard information including receiving and storage hazards. Instructions, special equipment needed for handling, information on approved containers, and instructions for the disposal of the material are also required.

B. The SDS, instructions and information required in paragraph “A” must be included with each shipment under a resulting contract.

12. **LIVING WAGES:**

A. The minimum wage required for any Contractor employee directly assigned to this City Contract is $13.03 per hour, unless Published Wage Rates are included in this solicitation. In addition, the City may stipulate higher wage rates in certain solicitations in order to assure quality and continuity of service.

B. The City requires Contractors submitting Offers on this Contract to provide a certification **(see the Living Wages Contractor Certification included in the Solicitation**) with their Offer certifying that all employees directly assigned to this City Contract will be paid a minimum living wage equal to or greater than $13.03 per hour. The certification shall include a list of all employees directly assigned to providing services under the resultant contract including their name and job title. The list shall be updated and provided to the City as necessary throughout the term of the Contract.

C. The Contractor shall maintain throughout the term of the resultant contract basic employment and wage information for each employee as required by the Fair Labor Standards Act (FLSA).

D. The Contractor shall provide to the Department’s Contract Manager with the first invoice, individual Employee Certifications for all employees directly assigned to the contract. The City reserves the right to request individual Employee Certifications at any time during the contract term. Employee Certifications shall be signed by each employee directly assigned to the contract. The Employee Certification form is available on-line at

https://www.austintexas.gov/financeonline/vendor_connection/index.cfm.

E. Contractor shall submit employee certifications annually on the anniversary date of contract award with the respective invoice to verify that employees are paid the Living Wage throughout the term of the contract. The Employee Certification Forms shall be submitted for employees added to the contract and/or to report any employee changes as they occur.

F. The Department's Contract Manager will periodically review the employee data submitted by the Contractor to verify compliance with this Living Wage provision. The City retains the right to review employee records required in paragraph C above to verify compliance with this provision.

13. **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING:**

A. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2.7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Offerors or potential Offerors are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.

B. If during the No-Contact Period an Offeror makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Offeror's Offer is disqualified from further consideration except as permitted in the Ordinance.

C. If an Offeror has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Offeror from doing business with the City for a period not to exceed three (3) years, provided the Offeror is given written notice and a hearing in advance of the debarment.

D. The City requires Offerors submitting Offers on this Solicitation to certify that the Offeror has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance. The text of the City Ordinance is posted on the Internet at: http://www.ci.austin.tx.us/edims/document.cfm?id=161145

14. **WORKFORCE SECURITY CLEARANCE AND IDENTIFICATION (ID):**

A. Contractors are required to obtain a certified criminal background report with fingerprinting (referred to as the "report") for all persons performing on the contract, including all Contractor, Subcontractor, and Supplier personnel (for convenience referred to as "Contractor's personnel").

B. The report may be obtained by reporting to one of the below governmental entities, submitting to fingerprinting and requesting the report [requestors may anticipate a two-week delay for State reports and up to a four to six week delay for receipt of a Federal report.].

i. Texas Department of Public Safety for any person currently residing in the State of Texas and having a valid Texas driver's license or photo ID card;
ii. The appropriate governmental agency from either the U.S. state or foreign nation in which the person resides and holds either a valid U.S. state-issued or foreign national driver's license or photo ID card; or
iii. A Federal Agency. A current Federal security clearance obtained from and certified by a Federal agency may be substituted.

C. Contractor shall obtain the reports at least 30 days prior to any onsite work commencement. Contractor also shall attach to each report the project name, Contractor's personnel name(s), current address(es), and a copy of the U.S. state-issued or foreign national driver's license or photo ID card.

D. Contractor shall provide the City a Certified Criminal Background Report affirming that Contractor has conducted required security screening of Contractor's personnel to determine those appropriate for execution of the work and for presence on the City's property. A list of all Contractor Personnel requiring access to the City's site shall be attached to the affidavit.

E. Upon receipt by the City of Contractor's affidavit described in (D) above and the list of the Contractor's personnel, the City will provide each of Contractor's personnel a contractor ID badge that is required for access to City property that shall be worn at all times by Contractor's personnel during the execution of the work.

F. The City reserves the right to deny an ID badge to any Contractor personnel for reasonable cause, including failure of a Criminal History background check. The City will notify the Contractor of any such denial no more than twenty (20) days after receipt of the Contractor's reports. Where denial of access by a particular person may cause the Contractor to be unable to perform any portion of the work of the contract, the Contractor shall so notify the City's Contract Manager, in writing, within ten (10) calendar days of the receipt of notification of denial.

G. Contractor's personnel will be required to wear the ID badge at all times while on the work site. Failure to wear or produce the ID badge may be cause for removal of an individual from the work site, without regard to Contractor's schedule. Lost ID badges shall be reported to the City's Contract Manager. Contractor shall reimburse the City for all costs incurred in providing additional ID badges to Contractor Personnel.

H. ID badges to enter and/or work on the City property may be revoked by the City at any time. ID badges must be returned to the City at the time of project completion and acceptance or upon removal of an individual from the work site.

I. Contractor is not required to obtain reports for delivery personnel, including but not limited to FedEx, UPS, Roadway, or other materials delivery persons, however all delivery personnel must present company/employer-issued photo ID and be accompanied by at least one of Contractor's personnel at all times while at the work site.

J. The Contractor shall retain the reports and make them available for audit by the City during regular business hours (reference paragraph 17 in Section 0300, entitled Right to Audit).

15. **ECONOMIC PRICE ADJUSTMENT:**

A. **Price Adjustments:** Prices shown in this Contract shall remain firm for the first 24 months of the Contract. After that, in recognition of the potential for fluctuation of the Contractor's cost, a price adjustment (increase or decrease) may be requested by either the City or the Contractor on the anniversary date of the Contract or as may otherwise be specified herein. The percentage change between the contract price and the requested price shall not exceed the percentage change between the specified index in effect on the date the solicitation closed and the most recent, non-preliminary data at the time the price adjustment is requested. The requested price adjustment shall not exceed five percent (5%) for any single line item and in no event shall the total amount of the contract be automatically adjusted as a result of the change in one or more line items made pursuant to this provision. Prices for products or services unaffected by verifiable cost trends shall not be subject to adjustment.

B. **Effective Date:** Approved price adjustments will go into effect on the first day of the upcoming renewal period or anniversary date of contract award and remain in effect until contract expiration unless changed by subsequent amendment.

C. **Adjustments:** A request for price adjustment must be made in writing and submitted to the other Party prior to the yearly anniversary date of the Contract; adjustments may only be considered at that time unless otherwise specified herein. Requested adjustments must be solely for the purpose of accommodating changes in the Contractor's direct costs. Contractor shall provide an updated price listing once agreed to adjustment(s) have been approved by the parties.

D. **Indexes:** In most cases an index from the Bureau of Labor Standards (BLS) will be utilized; however, if there is more appropriate, industry recognized standard then that index may be selected.

i. The following definitions apply:
(1) **Base Period:** Month and year of the original contracted price (the solicitation close date).
(2) **Base Price:** Initial price quoted, proposed and/or contracted per unit of measure.
(3) **Adjusted Price:** Base Price after it has been adjusted in accordance with the applicable index change and instructions provided.
(4) **Change Factor:** The multiplier utilized to adjust the Base Price to the Adjusted Price.
(5) **Weight %:** The percent of the Base Price subject to adjustment based on an index change.

ii. **Adjustment-Request Review:** Each adjustment-request received will be reviewed and compared to changes in the index(es) identified below. Where applicable:
(1) Utilize final Compilation data instead of Preliminary data
(2) If the referenced index is no longer available shift up to the next higher category index.

iii. **Index Identification:** Complete table as they may apply.

Weight % or $ of Base Price: **50%**	
Database Name: Employment Cost Index	
Series ID: CIU201S000400000I	
☒ Not Seasonally Adjusted	☐ Seasonally Adjusted
Geographical Area: United States (National)	
Description of Series ID: Total compensation for Private industry workers in Service-providing; natural resources, construction, and maintenance, Index	
This Index shall apply to the following items of the Bid Sheet / Cost Proposal: Sections 1 - 8	

Weight % or $ of Base Price: **50%**	
Database Name: Producer Price Index Industry Data	
Series ID: PCU325 - 325	
☒ Not Seasonally Adjusted	☐ Seasonally Adjusted
Geographical Area: N/A	
Description of Series ID: Chemical Mfg, Base Date 198412	
This Index shall apply to the following items of the Bid Sheet / Cost Proposal: Sections 1 - 8	

E. **Calculation:** Price adjustment will be calculated as follows:

Adjustment of a Portion of the Base Price: A portion of the Base Price changes such that only part of the price is adjusted, while the balance of the Base Price remains fixed. The portion of the Base Price subject to adjustment is defined in D iii. above.

Index at time of calculation
Divided by index on solicitation close date
Equals change factor
Multiply the Base Price by the portion of Base Price subject to change = weighted portion

Multiply the weighted potion times the change factor
Equals the Adjusted Price for the portion of the Base Price subject to the Index change
Add the portion of the Base Price not subject to adjustment
Equals the Adjusted Price

F. If the requested adjustment is not supported by the referenced index, the City, at its sole discretion, may consider approving an adjustment on fully documented market increases.

16. **WORKING ON OR NEAR ENGERGIZED EQUIPMENT – ARC FLASH PROTECTION (reference Section 0300 Paragraph 11. Compliance With Health, Safety, and Environmental Regulations):** Contractor's employees shall wear at all times the proper personal protective equipment and clothing required for the head, face, torso, arms, hands, and lower body that provides a minimum Arc Thermal Protection Value (ATPV) of 12 calories per square centimeter (cal/cm^2) when working on or near energized electrical equipment, or greater, if required by the NFPA Standard 70E and/or Article 410 of the NESC for the work being performed.

17. **PROJECT MANAGERS**: The following people are designated as Project Managers under this contract and will serve as the contact points between the City and the Contractor during the term of the Contract:

AE Project Manager
Fred Velarde
8003 Decker Lane
Austin, Texas 78724-3015
fred.velarde@austinenergy.com
512-505-7315

District Chilling Plant (DCP) 1
300 San Antonio Street,
Austin, Texas 78701
Armando Armengol, Superintendent
armando.armengol@austinenergy.com
512-505-3868

District Chilling Plant (DCP) 2,
410 Sabine Street, Austin, Texas 78701
Armando Armengol, Superintendent
armando.armengol@austinenergy.com
512-505-3868

Domain Chilling Plant (DCP)
3120 Kramer Lane,
Austin, Texas 78758
Whitney Moyer
whitney.moyer@austinenergy.com
512-505-7148

Mueller Energy Center (MEC)
4901 Lancaster Dr.
Austin, Texas 78723
Whitney Moyer
whitney.moyer@austinenergy.com
512-505-7148

Sand Hill Energy Center (SHEC)
1101 Fallwell Lane
Del Valle, Texas 78617

John Lalande
john.lalande@austinenergy.com
512-972-9456

Town Lake Center (TLC)
721 Barton Springs Rd.
Austin, Texas 78704
Renee Codina
renee.codina@austinenergy.com
512-974-0765

System Control Center
2500 Montopolis Dr.
Austin, Texas 78741
Renee Codina
renee.codina@austinenergy.com
512-974-0765

Combined Transportation Emergency Communication Center (CTECC)
5010 Old Manor Road
Austin, Texas 78723
Melody Connell
melody.connell@austinenergy.com
512-974-0766

Austin-Bergstrom International Airport (ABIA)
3400 Spirit of Texas Dr.
Austin, Texas 78719
Mike Robinson
mike.robinson@austintexas.gov
512-530-7504

Parks and Recreation (all locations)
Rigoberto Alvarez
rigoberto.alvarez@austintexas.gov
512-974-9538

Building Services (all locations)
David Ware
david.ware@austintexas.gov
512-974-6343

Palmer Events Center
900 Barton Springs Rd.
Austin, Texas 78704
Bryan Helford
bryan.helford@austintexas.gov
512-404-4311

Austin Convention Center
500 East Cesar Chavez St.
Austin, Texas 78701
Jerry Slabaugh
jerry.slabaugh@austintexas.gov
512-404-4310

18. **CONTRACT COMPLIANCE**: The following person is designated as Contract Compliance Administrator under this contract and will serve as the single point of contact between the City and the Contractor on all contract-related matters during the term of the Contract:

CITY OF AUSTIN
PURCHASING OFFICE
SPECIALTY CHEMICAL WATER TREATMENT SERVICES
SUPPLEMENTAL PURCHASE PROVISIONS
SOLICITATION: CAK0006

TABLES 1 & 2 WORK SITES: Michelle Casanova, MBA
Contract Administrator, Austin Energy
512/505-3747
Michelle.Casanova@austinenergy.com

*Note: The above listed Project Managers and Contract Compliance Administrator are not the authorized Contact Person for purposes of the **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING Provision** of this Section; and therefore, contact with these individuals is prohibited during the no contact period.

CITY OF AUSTIN
REQUEST FOR PROPOSAL (RFP)
SPECIALTY CHEMICAL WATER TREATMENT SERVICES FOR
AUSTIN ENERGY AND OTHER CITY DEPARTMENTS
SCOPE OF WORK
SOLICITATION: CAK0006

A. PURPOSE

The City of Austin's electric utility, Austin Energy, hereinafter referred to as AE, is requesting proposals from qualified Contractor(s) licensed and experienced in providing specialty chemical water treatment services for optimizing boiler water, cooling water, chilled water and water production equipment to industrial and commercial entities, and who can provide such services per the specifications listed in this section at multiple locations across the City of Austin in accordance with current federal, state, and city codes, laws, and regulations. NOTE: Professional engineering services will not be included or covered in a resulting contract.

B. BACKGROUND

Austin Energy is a department within the City of Austin and is the nation's eighth (8^{th}) largest publicly owned electric utility. AE's service area covers over 437 square miles, and includes all of Austin and Travis County, as well as 15 square miles of Williamson County. AE's mission is to deliver clean, affordable, reliable energy and excellent customer service.

Specialty chemical water treatment services are being solicited through this RFP for several AE locations and locations of other City departments to reduce or eliminate scaling and Micro Biological Organisms in all power plant heat exchangers, chilled water distribution lines, water storage tanks and other industrial equipment. Services shall result in containing the effects of Copper corrosion rates to less than one (1) millimeter per year and Iron corrosion rates to less than three (3) millimeters per year, per regulatory requirements and industry standards. Services will be conducted at several locations throughout the AE service area as included in Tables 1 and 2.

All services and pricing from a resulting contract will be the same for other City departments requiring water treatment services and equipment rentals/purchases as they are for AE. The City of Austin and AE reserve the right to add or remove service locations by amendment from a resulting contract.

C. DEFINITIONS AND TERMS

1. Red-Tagged – the action of marking a system or part as "out of order" until the replacement system or part arrives. A red-tag indicates that additional work is needed.

D. CONTRACTOR QUALIFICATIONS

1. Contractor shall perform specialty chemical water treatment services for optimizing boiler water, cooling water, chilled water and water production equipment to industrial and commercial entities per applicable federal, state, and city laws, ordinances, and codes.
2. Contractor shall employ technicians certified to work on each type of system and in confined spaces/underground environments to complete the services required through this solicitation.
3. Contractor shall have a minimum of five (5) years of experience providing specialty chemical water treatment services to large scale industrial customers (power plants or similar industrial facilities), including developing water treatment plans for commercial/industrial clients that optimize manufacturing/power production performance through water quality improvements.

E. CONTRACTOR REQUIREMENTS

1. Contractor shall have the ability to provide all chemicals, materials, and equipment to provide water treatment services to the following systems:
    - Boiler Water.
    - Reverse Osmosis (RO) systems.
    - Chilled Water Systems.
    - Cooling Tower Systems.
    - Cooling Water Systems.
    - Once through Cooling Water Systems.
    - Filtrations Systems.
    - NOx reduction attained by Selective Catalytic Reduction (SCR) injection.
    - Micro Biological testing of water systems at each location.
    - Heat exchangers etc. inspections are also a requirement of the program.
    - Boiler tube, condenser tube and heat exchanger metallurgical analysis.
2. Contractor shall employ staff and technicians who are available for emergency service calls, 24 hours a day, 7 days a week, 365 days a year, and who can be on-site within five (5) hours of receiving a call for emergency services.
3. Contractor shall provide, at all times, a Single Point of Contact (SPOC) who will be English speaking, not a supervisor or field technician, and who will be the designated contact for requesting both scheduled and emergency services.
4. The Contractor shall adhere to the Contractor Work Requirements, documents specifically created for each plant when accessing and working on different plants' sites. (***Tables 1 and 2***).
5. The Contractor shall provide their personnel with all the necessary personal protective safety equipment and clothing including but not limited to an ANSI approved hard hat, safety glasses, arc flash rated clothing (as required), and safety – toed footwear.

F. WORK/PERFORMANCE SPECIFICATIONS

The work/performance specifications described in this section are not intended to replace, minimize, or reduce the quantity or frequency of the tasks recommended in the applicable codes and standards. Only the services and equipment rental/purchases contained in the vendor offer will be covered by a resulting contract. Requests for services and equipment rental/purchases NOT contained in the vendor offer are not allowed and will not be covered by a resulting contract.

Contractor will provide specialty chemical water treatment services for optimizing boiler water, cooling water, chilled water and water production equipment as specified per the existing OEM's specifications and instructions and/or AE/City of Austin work site specification (ATTACHMENT A). This provision applies to all systems at each work site unless otherwise specified.

1. CONTRACTOR RESPONSIBILITIES

CITY OF AUSTIN
REQUEST FOR PROPOSAL (RFP)
SPECIALTY CHEMICAL WATER TREATMENT SERVICES FOR
AUSTIN ENERGY AND OTHER CITY DEPARTMENTS
SCOPE OF WORK
SOLICITATION: CAK0006

A. Contractor shall perform the work in accordance with all federal, state and local codes. These include, but are not limited to:
   i. Rules, Regulations, and Permits governed by the United States Environmental Protection Agency (EPA)
   ii. Occupational Safety and Health Administration (OSHA)
   iii. Texas Commission on Environmental Quality (TCEQ)
   iv. National Electric Code (NEC)
   v. Texas Insurance Code
   vi. Texas Administrative Code (TAC)
   vii. City of Austin (COA)

B. Contractor's employees will be issued security badges by AE Security, after completing the Workforce Security Clearance requirement (Section 0400, Item 14) which must be worn at all times when working at any AE work site. This requirement also applies to other City departments where Contractor and their staff are providing services, per the specifications of the specific department.

C. Contractor shall meet with facility management and each work site prior to conducting tests or inspections. They should be familiar with site equipment and should be prepared to discuss any risks associated with their work (i.e. risk of tripping an online generator during testing) so that AE can prioritize and properly schedule the work.

D. Contractor shall meet monthly with the AE Chemistry Consultant – Utility Process Consultant (UPC) – Chemistry to report on the chemistry program at each location site covered under a resulting contract.

E. Contractor's single point of contact (SPOC) shall coordinate in advance with each designated work site contact in order to minimize disruptions when isolating systems as needed to complete the work.

F. Contractor shall submit customer-approved forms that will be used to document implemented inspections and testing to the location-specific Project Manager and the UPC – Chemistry for review and approval prior to providing any services.

G. Contractor is responsible for reviewing the existing conditions and field-verifying all existing systems before beginning the scheduled and unscheduled work, including emergency services that are requested on a per-project basis.

H. Contractor shall submit to the location-specific Project Manager or designee and the UPC – Chemistry an Exit Report at the conclusion of all work (scheduled and unscheduled) within 24 hours of the site visit. The report shall be legible and show in detail the hours worked, travel time, work performed, parts used and expenses incurred, and shall identify and document any issues needing additional attention as well as the consequences if left unattended.

I. Contractor shall furnish Safety Data Sheets (SDS) and equipment descriptive literature for the approval of the location-specific Project Manager's prior to the purchase of materials, equipment, or spare parts.

J. Contractor and Contractor's staff shall have their own safety programs per OSHA requirements and adhere to AE/City department-specific work site requirements, including but not limited to:
   i. Attend an annual mandatory safety orientation at each work site prior to beginning any work at that site.
   ii. Adhere to AE's Hot Work (Attachment 4).
   iii. Adhere to AE's Confined Space program (Attachment 1).
   iv. Adhere to AE's Fall Protection and Prevention program. (Attachment 2).
   v. Adhere to AE's Personal Protective Equipment program. (Attachment 3).
   vi. Adhere to AE's Lockout/Tag-out program during working on the power plants' equipment.

K. After any testing or repairs, the Contractor shall coordinate with the designated contact and return the system to service in a fully automatic operating mode in accordance with the manufacturer's instructions and applicable codes and standards.

L. Contractor shall provide training for the location-specific personnel on any changes to water systems when requested. The training material shall be submitted to the designated contact for review and approval prior to conducting the training sessions.

M. Contractor shall notify location-specific management before leaving a site if a system or component of a system is "red-tagged".

N. If equipment is red-tagged the Contractor will notify facility management and coordinate the implementation of a resolution to the issue as quickly as possible.

O. In the event that Contractor cannot or does not have the ability and/or capacity to perform a required work task, AE/City of Austin reserves the right to seek bids from other qualified Vendors and to have Contractor pay for the specific work to be completed by the selected Vendor.

2. AUSTIN ENERGY (AE) RESPONSIBILITIES

A. AE shall provide access to the sites and parking for Contractor vehicles while servicing the water system.

B. AE shall provide a contact at each site with whom all scheduling, planning, and technical matters will be initiated, coordinated and approved.

C. AE shall provide a Contract Administrator as a contact for commercial or contract matter.

D. AE location-specific staff shall accompany Contractor's staff to oversee and verify any repairs undertaken.

E. AE shall provide 120-VAC, 15-amp max, single phase electrical receptacles at locations designated by AE.

3. OTHER CITY DEPARTMENT RESPONSIBILITIES

A. Each City Department requesting water treatment services and/or equipment rental/purchase shall be responsible for providing the following items to the Contractor, including, but not limited to:
   i. Access to the work site and parking for Contractor vehicles while servicing the water system.
   ii. A location-specific staff member shall accompany Contractor's staff to oversee and verify any repairs undertaken.
   iii. A contact at the work site with whom all scheduling, planning, and technical matters will be initiated, coordinated and approved.
   iv. A Contract Administrator as a contact for commercial or contract matter.
   v. Power sources, such as 120-VAC, 15-amp max, single-phase electrical receptacles.

4. SCHEDULED SERVICES

A. Scheduled services under this solicitation included, but are not limited to all water treatment services, chemical applications, water quality maintenance/testing, and water equipment maintenance and calibration that is required to be performed on a regular basis (frequency) per federal, state, or city law, regulation, ordinance, or code to maintain compliance and/or working order of water systems.

B. All scheduled services shall be conducted during standard working hours of 7:00 am to 6:00 pm Monday through Friday, not including City of Austin recognized holidays that fall on a weekday.

C. Upon award of this contract scheduled services will be coordinated on a per-site basis with the site contact listed, or their designee, in Tables 1 and 2.

D. Contractor's Single Point of Contact (SPOC) shall work with each work site Project Manager, or designee, and the UPC - Chemistry to schedule dates and times when water treatment services/testing will be performed.

5. UNSCHEDULED SERVICES

A. Unscheduled services include emergency services.

B. Emergency service calls will be made by the location-specific Project Manager or their designee.

C. Emergency services are defined as incidents where a system discharges and/or equipment malfunctions.

D. Contractor shall respond by phone within thirty (30) minutes of receiving a phone call requesting emergency services and shall have qualified technicians arrive on-site within five (5) hours of receiving an emergency services request.

E. Contractor staff shall review and assess the situation and prepare a time and materials quote for the required work for review by the work site Project Manager or their designee.

F. Contractor will not begin any work until the Project Manager or their designee has officially signed off on the quoted services and a Delivery Order has been created. Any work conducted without the location-specific Project Manager's (or their designee) written authorization is completed at the Contractor's risk and neither the City of Austin nor Austin Energy shall be responsible for payment of this work.

6. PERFORMANCE REOUIREMENTS

A. Contract shall coordinate with each location – site Project Manager for storage and delivery of the chemicals and for treating and testing the water systems.

B. Contractor shall adhere to DOT Regulations that require a copy of the SDS reside in the cab of the delivery driver responsible for delivering chemicals to each site.

C. Contractor shall ensure that chemicals are delivered in new, non-leaking DOT approved containers to each site.

D. Contractor shall provide any necessary test procedures and apparatus where not supplied by the specific location to monitor the recommended parameters.

E. Contractor shall conduct daily site visits during the initial implementation of water treatment services with chemical application per work site listed in Tables 1 and 2.

F. Contractor shall conduct weekly/bi-weekly site visits per site listed in Tables 1 and 2 after the initial implementation period, unless specified otherwise by the location-specific Project Manager or the UPC-Chemistry.

G. Contractor shall provide a verbal description of the status and conditions to the work site Project Manager or their designee, upon exiting each site. Contractor shall also furnish weekly written reports delivered within 24 hours of the weekly visits to the AE Contract Manager.

7. DELIVERABLES

A. Closed Loop and Glycol Systems

   i. Contractor shall maintain Corrosion Rates of .5 mils per year of Iron (Fe).

   ii. Contractor shall maintain Corrosion Rates of.2 mils per year Copper (Cu).

B. Water treatment services for all systems

C. Contractor shall provide instrumentation or apparatus to verify the corrosion rates, before and after water treatment services application.

D. For heat exchangers at all sites:

   i. Contractor shall maintain clean and free of deposits that may retard heat transfer in the system.

   ii. Contractor shall provide instrumentation or apparatus to prove the cleanliness of all Heat Exchanger Systems.

8. DAMAGES

A. Contractor shall be responsible for any damage to equipment caused through incorrect chemistry, incorrect application of chemistry, or incorrect chemical advice by their representative or by any recommendation made by their representative and applied by Austin Energy.

B. Contractor shall be responsible for returning any damaged or nonfunctioning equipment to working order including replacement of equipment that is damaged beyond repair or unable to function as designed.

9. CHEMICAL CONTAINMENT AND DISPOSAL

A. All supplied chemical containers or storage tanks shall have secondary containment.

B. Contractor shall provide to the location – site Project Manager or their designee the most recent copy of the Safety Data Sheets (SDS) for each chemical brought onto their work site.

C. Contractor shall be responsible for all cleanup costs for chemical spills related to failure of secondary containment, pumping equipment and during chemical unloading.

10. QUALITY CONTROL/QUALITY ASSURANCE

The Contractor shall implement and maintain a written Quality Control Plan to ensure proper preventative maintenance and inspections scheduled for all rented and purchased equipment covered under a resulting contract. The intent of the Quality Control Plan is to ensure that the maintenance of covered equipment adheres to the scope of work and all subsequent clarifications. The

Contractor shall submit the Quality Control Plan to the AE Contract Compliance Administrator or their designee within 30 days of the contract start date. The submitted Quality Control Plan may be reviewed on a quarterly basis to ensure vendor compliance.

11. CONTRACT CLOSE OUT

Thirty (30) days prior to the expiration of any agreement awarded from this solicitation, the Contractor shall inspect and test each water system in accordance with accepted inspection and test procedures, and provide the location – site Project Manager with a detailed report of each systems current disposition and needs.

Table 1: Group A Work Sites

Combined Transportation and Emergency Communication Center (CTECC) 5010 Old Manor Rd #330 Austin, TX 78723
Decker Power Plant 8003 Decker Ln. Austin, TX 78724
District Cooling Plant (DCP) I 300 San Antonio St. Austin, TX 78701
District Cooling Plant (DCP) II 410 Sabine St. Austin, TX 78701
Domain Cooling Plant (DCP) 3120 Kramer Ln. Austin, TX 78758
Mueller Energy Center (MEC) 4901 Lancaster Dr., Austin, TX 78723
Sandhill Energy Center (SHEC) 1101 Fallwell Lane Del Valle, TX 78617
System Control Center (SCC) 2500 Montopolis Dr, Austin, TX 78741

Table 2: Group B Work Sites

Austin Convention Center 500 East Cesar Chavez St.
Austin Bergstrom International Airport (ABIA) Central Plant 9815 Service Avenue
Austin Police Department 715 East 8th Street
DeWitty Building 2909 Rosewood Lane
Municipal Building 124 W. 8th Street
RBJ Building 15 Waller St
RLC Building #'s 1&4, 1520 Rutherford Lane
Palmer Event Center 900 Barton Springs Rd
Dove Springs 5801 Ainez Dr.
Parks and Recreation Central Maintenance Complex 2525 S Lakeshore Blvd.
Parks and Recreation Headquarters 200 S Lamar
Austin Recreation Center 1301 Shoal Creek
Mexican American Cultural Center 600 River St.
Carver Cultural Arts Center 1165 Angelina
Gus Garcia Recreation Center 1101 E. Rundburg Lane
Givens Recreation Center 3811 E. 12th
Turner Roberts Recreation Center 7201 Colony Loop Dr.
Senior Activity Center 2874 Shoal Crest Ave.
Zaragoza Recreation Center 2608 Gonzales St.
Old Bakery and Emporium 1006 Congress Ave.
Austin Nature & Science Center 301 Nature Center Dr.
Conley Guerrero Senior Center 808 Nile St.

ATTACHMENT A - 2016 Specialty Chemical Locations and Systems Information

Location Name	Chiller Tonnage	Flow Rate	Hot Water	Flow Rate	Cooling Water	Flow Rate	Other Equipment	Flow Rate
Austin Energy Locations								
District Chilling Plant 1 (DCP 1)	8,000 Tons	9,300 gpm			- 7,200 Ton Cooling Tower	10,000 gpm		
District Chilling Plant 2 (DCP 2)	20,000 Tons	20,000 gpm			- 17,200 Ton Cooling Tower	20,000 gpm		
Domain Chilling Plant (DCP)	14,000 Tons	Evap Vol: ~3mil gals; Avg annual evap flow: 6200gpm	N/A	N/A	- 15,000 Ton Cooling Towers (There are 2 towers with their basins manifolded together)	Condenser volume: ~200,000gal; Avg annual cond flow: 12,300gpm	N/A	N/A
Mueller Energy Center (MEC)	- (1) 900 ton, - (1) 1,500 ton, - (2) 2,500 ton chillers. - 800,000 gallon chiled water storage tank. (Tank plus loop equals 1.3 million gallon closed loop)	- 900 ton chiller flow rate 1300 gpm, - 1500 ton chiller flow rate 2300 gpm, - 2500 ton chillers 3700 gpm. - Chw closed loop flow rate 3000 gpm	- HRSG boiler, - Cleaver Brooks fire tube boiler 800 HP, - Unilux boiler 600 HP. - Surge tank 1600 gallon, - DA tank 1300 gallon	- HRSG 22,000 PPH, - Cleaver Brooks fire tube boiler 27,600 PPH, - Unilux 20,000 PPH. - DA tank 15,000 PPH	- (2) 4,000 gallon Evapco cooling towers, - (2) 11,000 gallon Evapco GPM cooling towers	- (2) 4,000 GPM cooling towers, - (2) 6000 GPM cooling towers	- ABB Hardness analyzer, - Marlo Water softener, - UltraTreat sand filter	- Marlo water softener, 97 gpm
Sand Hill Energy Center (SHEC)	- (10) 2,500 ton industrial chillers, - (1) 27,000 gal. closed cooling water loop		N/A	N/A	- (3) Simple Cycle cooling towers, - (1) HRSG 550,000 gal - six (6) cell Marley Cooing Tower		stage GE Reverse Osmosis with interstage Degasification, - 1 GE E-Cell Demineralizer: Total System product flow 200 gpm	
Decker Power Station					- Main Condenser and Auxiliary D1&D2	518,000 gpm	- Reverse Osmosis System	- 230 gpm make up flow/120 gpm product flow
Combined Transportation Emergency Communication Center (CTECC)	600	1,560 gpm						
Town Lake Center (TLC)	400	1,000 gpm						
System Communication Center (SCC)	- (2) 650 chillers Total = 1300 Tons	1,035 gpm per Chiller	N/A	N/A	- (2) Cell Tower cell capacity 4150 ea. cell volume 3500 ea.	- (2) Cell Tower 3900 gpm, 1950 gpm ea.	- (1) Thermal Storage Tank 380,000 gal	
City of Austin Departments								
Austin Bergstrom International Airport (ABIA)	3,730	4,032	YES	1,340	YES	11,190	N/A	N/A
Parks and Recreation Department Locations:								
Dove Springs	N/A	N/A	N/A	N/A	- Cooling Tower # 75	160 gpm	water service heat pump	160 gpm
Parks and Recreation Central Maintenance Complex	N/A	N/A	- 160 psig	165 gpm	N/A	N/A	N/A	N/A
Parks and Recreation Headquarters	- 50 ton	185 gpm	- 160 psig	165 gpm	- Cooling Tower # 55	185 gpm	air handler	185 gpm
Austin Recreation Center	- 80 ton	198gpm	- 160 psig	165 gpm	- Cooling Tower # 80	198 gpm	air handler	198 gpm
Mexican American Cultural Center	- 80 ton	150 gpm	- 100 psig	150 gpm	N/A	N/A	air handler	150 gpm
Carver Cultural Arts Center	- six commercial water heaters serving as the building boilers they run in cycle	160 gal each						
Gus Garcia Recreation Center	- 80 ton	150 gpm	160 psig	165 gpm	N/A	N/A	air handler	150 gpm
Givens Recreation Center	- 90 ton	unreadable	160 psig	160 gpm	N/A	N/A	N/A	N/A
Turner Roberts Recreation Center	- 60 ton	180 gpm	160 psig	180 gpm	N/A	N/A	air handler	180 gpm
Lamar Senior Activity Center	N/A	N/A	160 psig	150 gpm	N/A	N/A	air handler	150 gpm
Zaragoza Recreation Center	Currently working on getting the 12 ground loops fitted with pod feeder and sock filters							
Old Bakery and Emporium	- 55 ton	150 gpm	160gpm	150 gpm	N/A	N/A	air handler	150 gpm
Austin Nature and Science Center	N/A	N/A	160 psig	150 gpm	N/A	N/A	N/A	N/A
Conley Guerrero Senior Center	- 50 ton	150 gpm	160 psig	175 gpm	N/A	N/A	air handler	150 gpm
Building Services Locations								
Rebecca Baines Johnson Retirement Home	- (1) 160 ton chiller, - (1) 100 ton chiller	N/A	- 1,000,000 BTU HVAC boiler	N/A	- Open Loop Cooling Tower	N/A		
City of Austin Municipal Building	N/A	N/A	N/A	N/A	- Open Loop Cooling Tower	N/A		
DeWitty Building	N/A	N/A	N/A	N/A	- Open Loop Cooling Tower	N/A	- Closed Loop for WSHP's	N/A

Rutherford Lane Campus - Bldg. #1	- (1) 110 ton, - (1) 210 ton chiller	N/A	- 2,000,000 BTU HVAC boiler	N/A	- Open Loop Cooling Tower	N/A		
Rutherford Lane Campus - Bldg. #4	- (2) 325 ton chillers, - (1) 150 ton chiller	N/A	N/A	N/A	- Open Loop Cooling Tower	N/A		
Austin Convention Center								
Convention Center north	- 1,300 tons (District plant)	2x3600	- 7,000,000 BTU	2x900	- District plant	3600		
Convention Center south	- 1<200 tons (District plant)	2x1150	- 6,000,000 BTU	2x250	- District plant	1150		
5th Street garage	(District plant)	2x200	N/A	N/A	- District plant	N/A		
Palmer Events Center	- 1 (250 ton) - 2 (500 ton)	- 1x500, - 2x1000	- 2x4,000,000 BTU	2x800	- Cooling Tower	1500		

CITY OF AUSTIN

CONFINED SPACE ENTRY PROGRAM

March 2008

Approved By:

Signature signature on file Date _____
Garry Durante
Safety & Risk Management Manager

Signature signature on file Date _____
Roger Duncan
General Manager

NOTE: This document is formatted for double-sided printing. Blank pages have been inserted where necessary to facilitate correct pagination.

TABLE OF CONTENTS


AUSTIN
ENERGY

General Confined Space Program

100 OVERVIEW

101 PROGRAM DESCRIPTION

This Austin Energy (AE) safety program is intended to provide technical guidance for ensuring worker safety when working inside AE Confined Spaces. It will also guide employees in identifying and assessing confined space hazards. Confined Spaces found within the AE consist of both Permit Required Confined Spaces (PRCS), which may be reclassified to Non-Permit Required Confined Spaces and Enclosed Spaces.

Because the degree of hazard and risk differs between the two types of Confined Spaces, this guideline contains general guidelines and two subparts that address more specific guidelines for PRCSs, Non-PRCSs and Enclosed Spaces separately.

The AE Confined Space Entry Program is based on the following minimum requirements:

- Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.146, Permit Required Confined Space
- Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.269, Electric Power Generation, Transmission and Distribution

This safety program works in conjunction with the following, but is not limited to, the following AE and City of Austin safety programs, policies, and procedures:

- Hazard Communication Program
- Respiratory Protection Program
- Lockout/Tagout Program
- Hot Work Program
- Austin Energy Employee Safety and Risk Management Manual, latest edition.
- City of Austin Risk Management Manual, latest edition.

The AE Confined Space Entry Program consists of the following sections:

General Requirements Applicable to both Permit Required Confined Spaces and Enclosed Spaces
Sections 100 – 702

Subpart I **Permit Required Confined Spaces Specific Guidelines**
Sections 1.100 – 1.310

Subpart II **Enclosed Spaces Specific Guidelines**
Sections 2.100 – 2.600

102 PURPOSE

The AE Confined Space Entry Program shall be used to establish basic requirements for safe operational procedures and conditions to protect AE employees and contractors working in Confined Spaces and Enclosed Spaces throughout the entire AE system.

103 SCOPE

AE employees. The AE Confined Space Entry Program applies to AE employees who conduct any or all of the following activities:

- Perform inspections, tests, examinations, construction, or maintenance work in a Confined Space
- Make decisions affecting the employees entering Confined Spaces or the work being done in these spaces
- Make decisions related to the procurement and/or oversight of contractor work projects.

Contractors. The AE Confined Space Entry Program applies to AE-contracted employees who perform inspections, tests, examinations, construction, or maintenance work in a Confined Space.

200 TERMS AND DEFINITIONS CONFINED SPACES AND ENCLOSED SPACES

Term	Definition
Access	A doorway, hatch, manhole, or other entrance used to enter and exit a Permit Required Confined Space or Enclosed Space
Adequate Ventilation	Ventilation that provides and maintains safe oxygen levels of 19.5 to 23.5%, and prevents the accumulation of a hazardous atmosphere.
Authorized Attendant	[Electric power generation, transmission, and distribution] An employee assigned to remain immediately outside the entrance to an enclosed or other space to render assistance as needed to employees inside the space. (§1910.269(x)) [Permit-required confined spaces] An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program. (§1910.146(b)) Said attendant has successfully completed Confined and Enclosed Space training and is authorized by management to work Confined Spaces in accordance with the precautions specified within this program.
Authorized Entrant	Authorized Entrant means an employee who is authorized by the employer to enter a permit space. (§1910.146(b)) Said Entrant has successfully completed Confined and Enclosed Space training and is authorized by management to work Confined Spaces in accordance with the precautions specified within this program.

Authorized Entry Supervisor	The person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by §1910.146. Note: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by §1910.146 for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation. (§1910.146(b)) Said supervisor has successfully completed Confined and Enclosed Space training and is authorized by management to work Confined Spaces in accordance with the precautions specified within this program.
Confined Space	A space that: ▪ is large enough for an employee to bodily enter and perform assigned work and ▪ has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and ▪ is not designated for continuous employee occupancy (§1910.146(b))
Confined Space Entry Program	AE's written program and procedures for: ▪ evaluating and classifying Confined Spaces ▪ preventing unauthorized entry ▪ ensuring safety for authorized employees during entry into and work within Permit and Non Permit Required Confined Spaces and Enclosed Spaces
Double Block and Bleed	The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves. (§1910.146(b))
Employee	An employee of Austin Energy
Employee-in-Charge	An employee that is in charge of the work to be performed. **Note:** This employee must be an **Authorized Employee and a Qualified Employee as described in this program**. Term used primarily for work performed in the field.
Enclosed Space	A working space, such as a manhole, vault, tunnel, or shaft, that has a limited means of egress or entry, that is designed for periodic employee entry under normal operating conditions, and that under normal conditions does not contain a hazardous atmosphere, but that may contain a hazardous atmosphere under abnormal conditions. Note: Spaces that are enclosed but not designed for employee entry under normal operating conditions are not considered to be enclosed spaces for the purposes of §1910.269. Similarly, spaces that are enclosed and that are expected to contain a hazardous atmosphere are not considered to be enclosed spaces for the purposes of §1910.269. Such spaces meet the definition of permit spaces in §1910.146 of this Part, and entry into them must be performed in accordance with that standard. (§1910.269(x))

Engulfment	The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing. (§1910.146(b))
Entry	The action by which a person passes through an opening into a permit- required confined space, or Enclosed Space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space. (§1910.146(b))
Entry Permit	Printed document provided by AE to allow and control entry into a Permit Required Confined Space and that contains the information specified in §1910.146(f). (§1910.146(b))
Exhaust Ventilation System	A system for removing contaminated air from a space, comprising two or more of the following elements (a) enclosure or hood, (b) duct work, (c) dust collecting equipment, (d) exhauster, and (e) discharge stack. (§§1910.94(a)(1)(viii); 1926.57(f)(1)(viii))
Hazardous Atmosphere	[Permit-required confined spaces; Electric power generation, transmission, and distribution] An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from an enclosed space/permit space), injury, or acute illness from one or more of the following causes: Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL). Airborne combustible dust at a concentration that meets or exceeds its LFL. Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, "Occupational Health and Environmental Control", or in Subpart Z, "Toxic and Hazardous Substances," of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit. Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision. Any other atmospheric condition that is immediately dangerous to life or health. Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Standard, §1910.1200 of this Part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions. (§§1910.146(b), .269(x))
Hot Work	Work involving gas welding, cutting, brazing, grinding, or similar flame or spark producing operations. (§§1910.119(b), .272(c); 1926.64(b))
Hot Work Permit	The employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition. (§1910.146(b))

Immediately Dangerous to Life or Health (IDLH)	[Permit-required confined spaces; Electric power generation, transmission, and distribution] Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space. Note: Some materials — hydrogen fluoride gas and cadmium vapor, for example — may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health. (§§1910.146(b), .269(x)) [Respiratory protection] means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere. (§1910.134(b))
Irritant	Substance that by contact in sufficient concentration for a sufficient period of time will cause inflammatory response or reaction of the eye, skin, or respiratory system
Inerting	Displacement of the atmosphere in a Permit Space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible. (NOTE: This procedure produces an IDLH oxygen-deficient atmosphere.)
Intrinsically safe	Equipment and wiring which is incapable of releasing sufficient electrical or thermal energy under normal or abnormal conditions to cause ignition of a specific hazardous atmospheric mixture in its most easily ignited concentration." (ISA-RP12.6)
Isolation	Process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages. (§1910.146(b))
Lower Explosive Limit (LEL)	Lowest concentration of flammable gases or vapors in air below which ignition will not occur
Material Safety Data Sheet (MSDS)	Document prepared by the manufacturer of a chemical or material that describes the following data for the specific product: ▪ hazards ▪ physical characteristics ▪ recommended personal protective equipment ▪ proper handling techniques
Non-permit Confined Space	A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm. (§1910.146(b))
Off-Site Rescue Team	Organized public response agencies that are trained and expected to perform rescue and emergency service duties.
On-Site Rescue Team	AE employees designated by letter and trained to perform rescues in AE Permit Required Confined Spaces (see section 1.312 PRCS Rescue)

Permit Required Confined Space (PRCS)	Confined Space that: ▪ contains, or has the potential to contain, a hazardous atmosphere ▪ contains a material with the potential for engulfment of an entrant ▪ has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or by a floor that slopes downward and tapers to a smaller cross section ▪ contains any other recognized serious safety or health hazard
Permit System	The employer's (Austin Energy) written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry. (§1910.146(b))
Permissible Exposure Limit (PEL)	Maximum concentration of a material to which a person can be exposed without the use of personal protective equipment
Prohibited Condition	Any condition in a permit space that is not allowed by the permit during the period when entry is authorized. (§1910.146(b)) Examples of such conditions are failure of ventilation equipment, change in atmospheric hazards beyond those stated in the permit, failure of communication procedure, and unauthorized entry. Any worker involved in the entry of a confined space may terminate that entry until such time the prohibited (unsafe) condition is corrected. The complete pre-entry procedure must be repeated with a new permit being attached to the entry point.
Threshold Limit Value (TLV)	Concentration for a normal 8-hour workday, 40 hour week to which it is believed nearly all workers may be repeatedly exposed to day after day without adverse effects.
Upper Explosive Limit or Upper Flammable Limit (UEL or UFL)	Vapor in air concentration above which the concentration is too rich to burn (vapor rich)
Qualified Person	A person with specific training, knowledge and experience in the area and its associated hazards, for which the person has the responsibility and the authority to control and is designated by AE management to perform an assigned task.
Retrieval System	Equipment (including a retrieval line, full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from within permit spaces. (1910.146(b))
Shall	Denotes a practice or procedure that is mandatory under AE policy or regulated by law
Should	Denotes a recommendation that is to be followed whenever possible
Ventilation	A prerequisite to work in confined spaces and is mechanically forced (see definition Adequate Ventilation).

300 DUTIES AND RESPONSIBILITIES

The...	shall...
AE Managers and Supervisors	Implement this program uniformly and ensure resources are constantly provided to maintain it. Designate a Confined Space Coordinator to oversee implementation of this program at your site/facility. Ensure that all affected employees have received training appropriate to their specific responsibilities prior to performing any Confined Space work. Ensure that all equipment necessary to implement this program is available. Schedule and conduct Confined Space Program Assessments in accordance with the AE Hazard Assessment Program. Be ultimately responsible for ensuring compliance with this program.
Safety and Risk Management Section	Provide technical direction and support for AE workgroups with the implementation of this safety program. Schedule and conduct Confined Space Program Assessments in accordance with the AE Hazard Assessment Program. Maintain a current written program document by revising and re-issuing the written document, as necessary.
Confined Space Coordinator (Location/Site CSC)	Attend all Confined Space training, as required by this program. (Entry Supervisor, Attendant, Entrant, and Affected Employee training is required.) Conduct a review of the site to identify all confined spaces. Classify confined spaces according to the potential hazards identified for each. Maintain the Permit Required Confined Space Permit Log. Ensure that all equipment necessary to implement this program is available. Coordinate the activities required for authorized confined space entries. Identify confined space rescue resources and capabilities. Interface with rescue response teams. Provide (ensure) training for all affected workers specific to their assigned responsibilities. Ensure that all training is properly documented. Maintain all completed PRCS Entry Permits and Enclosed Space Cards for a period of one year after each entry. Review and update the Confined Space Listing annually.

The...	shall...
Authorized Entrant	Attend all Confined Space training, as required by this program. Know the hazards that may be faced during entry, including information on the mode of transmission, signs or symptoms, and consequences of the hazard exposure. Use equipment properly, including communication, personal protective equipment, and retrieval devices. Maintain communication with the Attendant. Notify Attendant whenever entrant detects any warning sign or symptom of exposure to a dangerous situation. Exit the Confined Space as quickly as possible whenever the Attendant or Entry Supervisor gives orders to do so, or when the entrant detects warning signs of exposure to a dangerous situation. Report any unusual events or unexpected confined space hazards to the Entry Supervisor. Maintain current first aid and CPR certification.
Contractor/Vendor	Follow the guidelines established in this program at all times when entering Confined Spaces. Coordinate any Confined Space entry operations with the sponsor and provide sufficient evidence that all entry requirements have been met. Obtain the approval and signature from AE Entry Supervisor on the PRCS Entry Permit before conducting any operations. Inform the sponsoring person of any unexpected hazards confronted or created in Confined Spaces.
Contractor/Vendor Sponsors	Ensure that contractors/vendors are informed of the requirements of this program.
Rescue Team	Be on alert and prepared to perform rescue duties before entry operations begin. Be aware of the location of the space, the hazards of the space, the number of entrants, and the rescue plans and procedures for each type of space. Be trained in the proper use of all personal protective equipment and rescue equipment. Be trained to perform the assigned rescue duties. Be trained in basic first aid and CPR, with at least one member of the responding rescue team having current certification in first aid and CPR. Practice performing a rescue from a Confined Space similar to a space found within the AE system, at least once per calendar year.

400 CONFINED SPACE PROGRAM REQUIREMENTS

The program requirements that are established in this section apply generically to all Confined Spaces, which include Permit Required Confined Spaces and Enclosed Spaces.

401 GENERAL REQUIREMENTS

AE shall establish confined space operational procedures through the use of this document.

402 WRITTEN PROGRAM

For employees that are required to perform work in confined spaces, AE shall implement the AE Confined Space Entry Program as delineated within this document. This written program shall be available for inspection by employees, their authorized representatives, and authorized government inspectors.

The Safety & Risk Management Section shall review and evaluate this standard practice program when any one of the following events occurs:

- the required annual review is due
- changes occur to OSHA Standard 29 CFR 1910.146 and 1910.269(e) that prompt revision of this document
- facility operational changes occur that require a revision of this document.

Additionally, AE Safety & Risk Management shall use the retained, canceled Permit Required Confined Space (PRCS) Entry Permits and Enclosed Space Cards to review the Confined Space Entry Program and revise the program as necessary. This review is necessary to ensure that employees participating in entry operations are protected from Confined Space hazards.

403 PROGRAM ASSESSMENT

The Confined Space Entry Program shall be assessed in accordance with the AE's Assessment Program. Assessment questions pertaining to the Confined Space Entry Program are contained in the Confined Space Assessment Guide (Appendix A). The questions have been designed to determine:

- Application of the Confined Space Entry Program to a specific location.
- Program design to ensure compliance with the AE Confined Space Entry Program.
- Verification of program implementation.

404 CONFINED SPACES DESIGNATION

A. Evaluation

At each site the Confined Space Coordinators shall evaluate their facilities to determine if any spaces meet the criteria for designation as a confined space. The Confined Space Decision Flowchart (Appendix B) as defined by OSHA Standard 29 CFR 1910.146 shall be used to facilitate compliance with this requirement.

B. Confined Spaces Identification

After facility evaluation, spaces that meet any of the following criteria shall be identified as a confined space:

- The space is large enough and so configured that an employee can bodily enter and perform assigned work.
- The space has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- The space is not designed for continuous employee occupancy.
- The space contains or has a potential to contain a hazardous atmosphere.
- The space has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section.
- The space contains any other recognized serious safety or health hazard.

C. Classification (Permit Required Confined Space or Non-permit Confined Space)

When it has been determined that confined spaces are present at a given work site, an examination of each space shall be conducted in order to determine whether it is an Enclosed Space or PRCS.

Non-permit Confined Space

Those confined spaces that do **not** contain or have the potential to contain any *atmospheric* hazards capable of causing death or serious physical harm shall be designated as non-permit confined space.

Non-permit confined spaces are working spaces such as tunnels, or shafts that meet the following criteria:

A space that does not contain or, with respect to atmospheric hazards, or a space that does not have the potential to contain, any hazard capable of causing death or serious physical harm.

Permit Required Confined Spaces

Those confined spaces that have a known potential to contain hazardous atmospheres shall be designated as Permit Required Confined Spaces.

PRCSs meet any of the following criteria:

- contain or have the potential to contain a hazardous atmosphere
- contain a material with the potential for engulfment of an entrant
- have an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section
- contains any other recognized serious safety or health hazard.

Until the pre-entry procedures (as defined in section 501) demonstrate otherwise, all spaces shall be considered PRCSs.

D. Reclassification of PRCS to Non-permit Confined Space

A space classified by AE as a PRCS may be reclassified as a non-permit confined space **as long as atmospheric hazards are not present and under all of the following conditions**:

- The PRCS must pose no actual or potential atmospheric hazards, and all hazards within the space must have been eliminated before entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the atmospheric hazards remain eliminated.

- If it is necessary to enter the PRCS to eliminate hazards, such entry shall be performed under the assumption that a hazard exists. Testing and inspection during that entry must demonstrate that the hazards within the PRCS have been eliminated.

  NOTE: Control of atmospheric hazards through forced air ventilation alone does not constitute elimination of the hazards. Constant monitoring shall also be conducted in conjunction with the forced air ventilation. These measures together ensure that the forced air ventilation continues to provide a safe worker environment as a non-permit confined space.

- The entry supervisor shall document the basis for determining that all hazards in a permit space have been eliminated, by completing and signing the AE entry permit document. The signed permit shall be made available to each employee entering the space.

- If hazards arise within a PRCS that has been declassified to a non-permit confined space, each employee in the space shall immediately exit the space and notify his or her supervisor. The entry supervisor shall then reevaluate the space and determine if it must be reclassified as a PRCS according to the other applicable provisions of this program.

E. Non-Permit Required Confined Space Certification

When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the entry supervisor shall reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

F. Confined Space Listing (Inventory)

When a facility has been evaluated and Confined Spaces have been identified, the site Confined Space Coordinators shall list all identified Confined Spaces at their site on an AE Confined Space Listing form (Appendix C). This listing shall become part of the site Confined Space Entry plan.

The Confined Space Listing shall be reviewed and updated annually or whenever equipment, work processes, or space conditions change the classification of a Confined Space.

405 COMMUNICATION

Reliable communication through the use of two-way radios or other equivalent means shall be provided at all Confined Spaces including manholes. The purpose is to ensure that effective communication can be maintained among all the personnel involved with the work.

406 EQUIPMENT FOR CONFINED SPACE OPERATIONS

AE shall provide the following equipment at no cost to employees, maintain that equipment properly, and ensure that employees are trained in the proper use of the equipment:

- Testing and monitoring equipment needed to determine if hazardous conditions exist or to verify that they do not exist
- Ventilating equipment needed to obtain acceptable air quality entry conditions
- Communications equipment necessary for communication between employees involved in the entry operation
- Personal protective equipment whenever feasible engineering and work practice controls do not adequately protect employees
- Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency
- Barriers and shields as required to protect workers from pedestrian and vehicular traffic
- Ladders needed for safe entry and exit by authorized entrants
- Rescue, retrieval, and emergency equipment needed to extract or treat injured personnel, except when the equipment and/or service is provided by rescue services that are immediately available
- Any other equipment necessary for safe entry into and rescue from Confined Spaces in the AE system.

As a minimum the following intrinsically safe equipment will be maintained where required for confined space operations.

- Multi-gas monitors
- Ventilation equipment
- Rescue tripod/davit arm and winch system
- Body harnesses
- Extraction cable and lanyards
- Air compressors (as required)
- Supplied air respirators (as required)
- Air purifying respirators (as required)
- SCBA equipment (as required)
- Emergency escape breathing apparatus (as required)
- Handtools
- Radio communication system (as required)
- Lockout/tagout equipment (as required)
- Intrinsically safe lighting equipment
- Personal protective clothing
- Hearing protection equipment
- Head protection equipment
- Eye protection equipment
- First aid kits
- Timekeeping equipment
- Escape ladders for depths of four feet or shoulder height
- Signage (as required)

500 CONFINED SPACE ENTRY REQUIREMENTS

501 PRE-ENTRY MEASURES

Before employees enter any confined space, the Entry Supervisor shall ensure that each employee has been provided with the confined space training at the appropriate level as required by this program.

The entry supervisor shall make certain that all the employees in his/her group have the necessary information, work skills, and tools to do the work safely. A pre-work meeting (tailgate or job briefings) shall be held by the entry supervisor to plan that day's (or job's) work.

Also, the following precautions shall be made before any employee is authorized to enter a confined space:

- When removing an entrance cover, unsafe conditions that exist shall be eliminated before the cover is removed.
- The opening at entrance covers shall be guarded by a railing, temporary cover, or other temporary barrier. Guards shall be such that they prevent accidental fall-through and protect each employee working in the space from foreign objects entering the space.
- Before each entry, the internal atmosphere shall be tested by a competent person with a verified calibrated direct-read instrument for the following conditions in the order given:

1. Oxygen content (between 19.5% and 23.5%)	OSHA Mandated
2. Flammable gases and vapors	OSHA Mandated
3. Potential toxic air contaminants	OSHA Mandated
4. Airborne combustible dusts	Site Specific

There shall be no hazardous atmosphere within the space whenever any employee is inside the space.

502 FORCED AIR VENTILATION

Continuous forced air ventilation shall be used in confined spaces according to the following safety measures:

- No employee shall enter the space until testing confirms that the forced air ventilation has eliminated any hazardous atmosphere.
- The forced air ventilation shall be directed such that the immediate areas any employees occupy are ventilated. The ventilation shall be present within the space and continue until all employees have left the space.
- The air supply for the forced air ventilation shall be from a clean source and shall not increase the hazards in the space.
- The atmosphere within the space shall be continuously monitored to ensure that the forced air ventilation prohibits the accumulation of a hazardous atmosphere.

- If a hazardous atmosphere is detected during entry:
  - All employees shall evacuate immediately.
  - The space shall be evaluated to determine how the hazardous atmosphere developed.
  - Measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

503 CERTIFICATION

The Entry Supervisor shall certify that the space is safe for entry and that the required written certification measures are documented. Certification documentation shall include the completed Permit Required Confined Space Entry Permit (Appendix D) or Enclosed Space Card (Appendix E). The certification shall be made before entry and shall be posted at the entry point so that it is available to each employee entering the space.

Employees qualified to certify a safe entry into a space, provided they are trained in the AE Confined Space Entry Program, are:

- Confined Space Coordinators
- Entry Supervisors

When there are changes in the use or configuration of a non-permit required confined space or an enclosed space that might increase the hazards to entrants, the entry supervisor or confined space coordinator shall reevaluate that space and, if necessary, reclassify it as a PCRS. The required certification procedures for a PRCS shall apply at that point.

504 HOT WORK

Whenever work occurs that involves electric or gas welding, cutting, brazing, or similar flame or spark-producing operations inside a Confined Space, the following safety precautions shall be taken:

- Adequate ventilation shall be established and maintained inside the space(as described in section 502 *Forced Air Ventilation*).

- All welding and cutting operations carried on in confined spaces shall be adequately ventilated to prevent the accumulation of toxic materials or possible oxygen deficiency. This applies not only to the welder but also to helpers and other personnel in the immediate vicinity. All air replacing that is withdrawn shall be clean and respirable. 1910.252 (b(4(ii)))

- Gas cylinders shall remain on the outside of the space, and equipment shall be secured to prevent unexpected movement.

- When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, the following actions shall be taken:

▸ To prevent accidental contact:	All electrodes shall be removed from the holders.
	Holders shall be carefully located so that accidental contact cannot occur
	The machine shall be disconnected from the power source.

‣ To eliminate the possibility of gas escaping through leaks or improperly closed valves:	The torch valves shall be securely closed. The gas supply to the torch shall be positively shut off at some point outside the confined area. Where practicable, the torch and hose shall also be removed from the confined space.

- Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing the welder in case of emergency. Any safety belts and lifelines used for this purpose shall be attached to the welder's body so that the welder can be removed without jamming a small opening.

  An attendant with a preplanned rescue procedure shall be stationed outside the confined space to observe the welder at all times. The attendant shall be capable of executing rescue operations when necessary.

- Upon completion of work, welders shall provide some means of warning other workers of the presence of hot metal.

- A fire watch shall be maintained for at least a half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires. Fire watchers shall have fire extinguishing equipment readily available and be trained in its use. They shall be familiar with facilities for sounding an alarm in the event of a fire. They shall watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm. 1910.252 (a)(2)(iii)(B)

- The number of personnel inside the space during hot work activity shall be limited to only those who are actually needed to perform the work.

All hot work activities shall be performed under and in accordance with the requirements of a job-specific **Hot Work Permit.**

600 CONFINED SPACE TRAINING

AE shall provide confined space training to all employees whose work activities might expose them to the hazards associated with Confined Spaces. The training shall provide the employee with the understanding, knowledge, and skills necessary to perform their work safely.

AE shall provide Confined Space training for new or transferred employees before they are authorized or permitted to perform work inside a Confined Space.

601 AFFECTED EMPLOYEE TRAINING

Confined Space training is required for ALL employees whose jobs expose them to the hazards of any PRCS or Enclosed Space. All affected employees shall attend this training. Topics shall include:

- Contents of OSHA Standard 29 CFR 1910.146 and 1910.269
- Existence and location of Confined Spaces
- Dangers posed by Confined Spaces

- How to recognize a Confined Space using site-specific examples
- Restrictions to entering a Confined Space without authorization
- Procedures for gaining authorization to enter a Confined Space
- How to prepare and read a PRCS Entry Permit
- How to prepare and read an Enclosed Space Card
- Entry Supervisor duties
- Entrant and attendant duties
- Rescue and emergency procedures
- First Aid
- CPR.

602 CONTRACTOR TRAINING

Any contractor performing work that requires entry into Confined Spaces shall satisfy the training requirements of this standard **and provide proof of completion of training to the sponsoring person before any work commences**.

603 PRCS TRAINING

A. Advanced Training

In addition to the affected employee training, advanced training is required for employees whose work activities might expose them to the hazards associated with a PRCS.

B. Training Frequencies

The appropriate level of training shall be provided for each category of PRCS employee:

- Whenever there is reason to believe that the employee's knowledge or use of the established PRCS entry procedures is inadequate.
- Prior to an initial assignment to perform PRCS work.
- Whenever there is a change in assigned duties.
- Whenever there is a change in the PRCS operations that presents a hazard for which the employee has not received previous training.
- Whenever there is reason to believe that deviations have occurred from conditions specified on the original PRCS Entry Permit.
- Whenever there is a change in the written program or related procedures.

604 TRAINING DOCUMENTATION

To certify that all Confined Space training requirements have been met, training attendance shall be documented. Training documentation will include the name of each employee who attended the training, the date that he or she attended, and the signature of the instructor. The document shall be posted to the AE training site and available to managers/supervisors for verification.

700 CONFINED SPACE PROGRAM REVIEW

701 ANNUAL PROGRAM REVIEW

The Confined Space Coordinator shall conduct an annual review of the Confined Space Entry Program. The purpose of the review is to ensure that employees who perform Confined Space entries are protected from any new hazards that may have been identified during previous Confined Space work. OSHA mandates the performance of an annual program review. However if no entry into a PRCS was made during the preceding 12-month period, no review is necessary.

702 PERIODIC REVIEW OF PROCEDURES

Confined Space entry procedures shall be reviewed when there is a reason to believe that the precautions taken to protect workers may be ineffective. Examples of circumstances that may prompt a periodic review of the program include:

- any unauthorized entry into a PRCS.
- the detection of a Confined Space hazard that is not covered by a PRCS Entry Permit or Enclosed Space Card.
- the occurrence of an injury or near-miss accident during entry.
- a change in the use or configuration of a PRCS.
- employee complaints about the effectiveness of the program.

Subpart I
PERMIT REQUIRED CONFINED SPACE (PRCS) PROGRAM

This section applies only to Permit Required Confined Spaces.

1.100 PRCS OVERVIEW

All provisions of the General Program (Sections 100-702) shall apply to this Subpart. Where requirements in this Subpart conflict with requirements in the General Confined Space Program, the requirements of this Subpart shall take precedence.

1.101 DESCRIPTION

A Permit Required Confined Space (PRCS) is one that has the greatest potential for causing serious injury to employees. Whenever it is necessary to enter into a PRCS, entry shall only be accomplished after a careful analysis of all potential hazards and implementation of measures for ensuring the protection of those making the entry. Examples of PRCSs include boilers, tanks, vessels, closed circuit breakers, and transformers.

The hazards and precautions associated with all PRCS entries shall be documented on a PRCS Entry Permit prior to allowing entry into the space.

1.200 DUTIES AND RESPONSIBILITIES FOR PRCS

The...	shall...
Authorized Entrants	Attend all Confined Space training, as required by this safety program. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure. Properly use equipment needed for PRCSs. Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space as required by this program. Alert the attendant whenever: ▪ The entrant recognizes any warning sign or symptom of exposure to a dangerous situation. ▪ The entrant detects a prohibited condition. Exit from the PRCS as quickly as possible whenever: ▪ An order to evacuate is given by the attendant or the entry supervisor. ▪ The entrant recognizes any warning sign or symptom of exposure to a dangerous situation. ▪ An evacuation alarm is activated. ▪ Report any unusual or unexpected Confined Space hazards to the Entry Supervisor.

The...	shall...
Authorized Attendant	Attend all confined space training that is required by this program. Know the hazards that may be faced during entry, including the mode of transmission, signs or symptoms, and consequences of hazard exposure, as well as, mechanical and engulfment hazards. Continuously maintain an accurate count of authorized entrants in the PRCS. Ensures that the means used to identify authorized entrants under this program accurately identifies who is in the PRCS. Maintain clear access to and from the confined space. Remain in a predesignated location outside the PRCS during entry operations until relieved by another attendant. NOTE: An Authorized Attendant is allowed to leave his/her station only when another Authorized Attendant takes his/her place and is informed of all pertinent safety information. Maintain constant communication with Authorized Entrants by use of voice, if effective, or through the use of a two-way radio. Continuously monitor entrant status and evacuate entrants from the space if a hazardous condition develops. Be aware of possible behavioral effects of hazard exposure in authorized entrants. Evacuate all entrants if he/she detects the behavioral affects of hazard exposure in an Authorized Entrant or if a situation develops outside the PRCS that could endanger the entrants. The Authorized Attendant shall evacuate any entrants if a condition develops such that he/she is unable to safely perform his/her duties. Summon rescue and emergency services if the entrant needs assistance to escape from the PRCS. NOTE: Authorized attendants may enter a PRCS to attempt a rescue **only** if they have been trained and equipped for rescue operations as required by the rescue and emergency services section of this program. The attendant may enter only after another employee with equal or greater training has assumed the attendant responsibilities. Performs non-entry rescues as specified by AE's rescue procedure. Monitor activities inside and outside the space to determine if it is safe for entrant to remain in the space. Order the authorized entrants to evacuate the PRCS immediately under any of the following conditions. • If the attendant detects a prohibited condition. • If the attendant detects the behavioral effects of hazard exposure in an entrant. • If the attendant detects a situation outside the space that could endanger the entrants. • If the attendant cannot effectively and safely perform all the duties required under this section. Notify the Entry Supervisor, immediately, if hazardous conditions have developed while entry is in progress.

The...	shall...
Authorized Attendant (continued)	Take the following actions when any unauthorized person approaches or enters a PRCS while entry is underway: • Warn the unauthorized persons that they must stay away from the PRCS. • Advise the unauthorized persons that they must exit immediately if they have entered the PRCS. • Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the PRCS. Perform no other duties that might interfere with the attendant's primary duty to monitor and protect the entrants inside the PRCS.
Entry Supervisor	Attend all Confined Space training that is required by this program. Know the hazards that may be faced during entry, including the mode of transmission, signs or symptoms, and consequences of the hazard exposure, as well as, mechanical and engulfment hazards. Verify, by checking the PRCS Entry Permit, that all tests specified by the Entry Permit have been conducted and that all procedures and equipment specified by the Entry Permit are in place before endorsing the permit and allowing personnel to enter. Verifies that rescue services are available and that the means for summoning them are operable. Terminate the entry and cancel the PRCS Entry Permit if the entry operations have been completed or if a condition that is not allowed under the Entry Permit arises in or near the PRCS. Prior to authorizing entry, verify that rescue services are available and that the means for summoning help are operable. Coordinate arrangements to have Confined Space rescue services provided, per the location's designated rescue plan, when performing Confined Space work outside the Austin city limits. Ensure that acceptable entry conditions remain consistent with terms of the PRCS Entry Permit and that acceptable entry conditions are maintained. Checks are made whenever responsibility for a PRCS entry operation is transferred and at intervals as dictated by the hazards and operations performed within the space. Ensure that any replacement supervisors are informed of entry operations, including entry conditions, availability of rescue personnel, and the identification of attendant. Post the completed PRCS Entry Permit or Enclosed Space Card outside the Confined Space, along with any other required documents. Verify that each entrant has received proper training. Remove unauthorized individuals who enter or attempt to enter the confined space during entry operations. Record any unusual events (e.g., injuries or accidents) or unexpected hazards on the PRCS Entry Permit that were encountered. Following closure of the Confined Space, return the completed PRCS Entry Permit or Enclosed Space Card to the designated location.

The...	shall...
Austin Energy Responsibilities for Contractor Operations in PRCS	*Before contractors are permitted to perform any work associated with any PRCS:* AE sponsor shall inform the contractor of the requirements associated with AE's Confined Space Entry Program, including: • Provide contractor with site safety orientation. • The workplace contains PRCSs and that PRCS entry is allowed through compliance with this company Confined Space Entry Program or meeting with OSHA 1910.146 requirements. • The elements, including the hazards identified and the host employer's experience with the space, that make the space in question a PRCS. • The precautions required for ensuring that work can be accomplished safely within the PRCS • Any precautions or procedures that the company has implemented for the protection of employees in or near any PRCS where contractor personnel will be working. When both company personnel and contractor personnel will be working in or near any PRCS: Qualified AE personnel shall: • Coordinate entry operations of both contractor and AE employees. • Debrief the contractor at the conclusion of the entry operation. Discuss any issues regarding the AE Confined Space Entry Program and any hazards or unexpected situations that were encountered which may have impaired their safety created in the concerned PRCSs during entry operations.
Contractor Responsibilities Regarding Contractor Operations in any PRCS	In addition to complying with the PRCS requirements that apply to all employees of AE, each contractor who is retained to perform PRCS entry operations shall: • Comply with OSHA 1910.146 Permit-Required Confined Space. • Provide proof of company confined space program, training and certifications of employees working on site. • Obtain any available information regarding PRCS hazards and entry operations from AE. • Coordinate entry operations with AE, when both company personnel and contractor personnel will be working in or near PRCSs. • Use AE PRCS log in process. • Provide AE a copy of PRCS permit when work has been terminated. Contractor personnel shall be debriefed following completion of work inside of PRCSs to determine if any hazards or unexpected situations were encountered, which may have impaired their safety.

1.300 PRCS PROGRAM REQUIREMENTS

1.301 EMPLOYEE PROTECTION REQUIREMENTS

Under the PRCS requirements by OSHA Standard 29 CFR 1910.146, AE shall perform the following:

- Implement the measures necessary to prevent unauthorized entry.
- Identify and evaluate the hazards of PRCSs before employees enter them.

AE shall develop and implement the means, procedures, and practices necessary for safe PRCS entry operations, including, but not limited to, the following:

- Specifying acceptable entry conditions
- Isolating the PRCS
- Purging, inerting, flushing, or ventilating the PRCS as necessary to eliminate or control atmospheric hazards
- Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards
- Verifying that conditions in the PRCS are acceptable for entry throughout the duration of an authorized entry.

1.302 PRCS EVALUATION

When entry operations are to be conducted, Confined Space Coordinators or Entry Supervisors shall evaluate PRCS conditions as follows:

- Before each entry is authorized to begin, test conditions in the PRCS to determine if acceptable entry conditions exist.
- If entry is authorized, monitor entry conditions continuously in the areas where authorized entrants are working. Test the PRCS as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.

NOTE: Refer to Section 1.307 *Atmospheric Testing* for detailed testing guidelines.

1.303 EMERGENCY PROCEDURES

The Entry Supervisor shall develop procedures prior to the commencement of confined space operations for the following:

- Summoning rescue and emergency services
- Rescuing entrants from PRCS
- Providing necessary emergency services for rescue
- Preventing unauthorized personnel from attempting a rescue.

1.304 PRE-ENTRY MEASURES

A. Entry team

As part of the preplanning process for entering the PRCS, the Entry Supervisor shall designate in advance the employees who are to have active roles in the entry operation. Additionally the Entry Supervisor shall identify the duties of each such employee. The PRCS entry team shall include but is not limited to the following:

- Authorized entrants
- Attendants
- Entry supervisors
- Atmospheric monitoring personnel
- Rescue/emergency services personnel.

B. OSHA compliance

To comply with the PRCS system required by OSHA Standard 29 CFR 1910.146, Austin Energy shall document the completion of the following measures before entry is authorized:

- Acceptable entry conditions are specified.
- The PRCS is isolated.
- The PRCS has been purged, inerted, flushed, or ventilated as necessary to eliminate or control atmospheric hazards.
- Pedestrian, vehicle, or other barriers has been provided as necessary to protect entrants from external hazards.
- Conditions in the PRCS have been verified and are acceptable for entry throughout the duration of an authorized entry.
- Control of Hazardous Energy (LOTO).

C. Attendant multiple-space monitoring

Attendants may be assigned to monitor more than one PRCS provided their duties can be effectively performed for each monitored PRCS. The attendants may be stationed at any location outside the PRCS to be monitored as long as their duties can be effectively performed for each PRCS that is monitored.

When a single attendant monitors multiple spaces, the means and procedures for the attendant to respond to an emergency affecting one or more of the monitored PRCSs must be entered on the PRCS Entry Permit.

D. Awareness measures

The site Confined Space Coordinator shall post danger signs at all access points of a PRCS, conduct site orientation for new employees, and use any other equally effective means to inform employees of the existence and location of the danger posed by the PRCSs.

All danger signs shall contain wording similar to the following:

DANGER

PERMIT REQUIRED CONFINED SPACE

DO NOT ENTER

E. PRCS entry prevention measures

Each site Confined Space Coordinator shall take effective measures to prevent non-trained, unauthorized employees from entering a PRCS.

1.305 PRCS ENTRY PERMITS

The AE PRCS Entry Permit is a printed document that authorizes and controls entry into a PRCS. The permit establishes administrative controls for ensuring that space to be entered has been thoroughly evaluated to identify hazards and to ensure that adequate precautions are established prior to allowing any entry.

A. Control of PRCS Entry Permit

Each work location shall establish a procedure for controlling the issuance and retention of PRCS Entry Permits. The Confined Space Permit Required Log (Appendix F) shall be maintained as part of the established procedure.

B. Required contents

Each PRCS shall have a completed PRCS Entry Permit outside the space. The permit shall include the following information:

- Permit number, which shall be sequential for each permit. A sequential numbering system establishes a method for performing annual audits of the overall Confined Space Program.
- PRCS to be entered
- Purpose of the entry
- Date and the authorized duration of the permit
- By name, authorized entrants within the PRCS
- By name, persons currently serving as attendants
- By name, individual currently serving as entry supervisor, with a space for the signature or initials of the entry supervisor who originally authorized entry
- Hazards of the PRCS to be entered
- Measures used to isolate the PRCS and to eliminate or control PRCS hazards before entry. For example, the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing PRCSs.

- Acceptable entry conditions
  - Results of initial and periodic atmospheric tests performed, accompanied by the names or initials of the testers and by an indication of when the tests were performed
  - Rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services
  - Communication procedures used by authorized entrants and attendants to maintain contact during the entry
  - Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with the permit requirement.
  - Any other information whose inclusion is necessary, given the circumstances of the particular confined space, in order to ensure employee safety.
  - Any additional permits, such as for hot work, that have been issued to authorize work in the PRCS. Additional permits are considered part of the PRCS Entry Permit and shall be attached for reference.

C. Permit procedures

Development and implementation for the preparation, issuance, use, and cancellation of PRCS Entry Permits shall be as follows:

- When employees of contractor personnel or non-company employees are working simultaneously as authorized entrants in a PRCS, the Entry Supervisor of the permit shall ensure that all parties concerned are aware of the hazards and of the accepted entry procedures for the specific operation. This will ensure entry operations are properly coordinated.

- The Entry Supervisor of the permit shall ensure that all parties concerned are aware of the accepted procedures necessary for concluding the entry after entry operations have been completed (such as closing off PRCS and canceling the permit).

- The Entry Supervisor of the permit shall post the completed PRCS Entry Permit at the entry portal or by any other equally effective means to all authorized entrants at the time of entry. This ensures that entrants can confirm that pre-entry preparations have been completed.

- The Entry Supervisor shall immediately review and as necessary halt and revise entry operations when there is reason to believe that the measures taken under the PRCS program may not protect employees. The focus will be directed at the correction of deficiencies found to exist before subsequent entries are authorized. Examples of circumstances requiring the review of the PRCS Program are as a minimum:
  - Any unauthorized entry of a PRCS.
  - The detection of a PRCS hazard not covered by the permit.
  - The detection of a prohibited condition by the permit.
  - The occurrence of an injury or near miss during entry.
  - A change in the use or configuration of a PRCS.
  - Employee complaints about the effectiveness of the program.

NOTE: Any problems encountered during an entry operation shall be noted on the permit so that appropriate revisions to the PRCS Program can be made.

- The Entry Supervisor shall terminate entry and cancel the PRCS Entry Permit when either of the following circumstance occurs:
  - The entry operations covered by the PRCS Entry Permit have been completed.
  - A condition that is not allowed under the PRCS Entry Permit arises in or near the PRCS.

D. Permit duration

The duration of the entry permit may not exceed the time required to complete the assigned task or job identified on the permit.

NOTE: If the PRCS is a part of an extended outage, the PRCS permit may last for the duration of that specific outage. However in this case, the PRCS Atmosphere Evaluation and Log (Appendix G) must be completed and placed at the entry prior to every shift change.

E. Permit retention

Each site Confined Space Coordinator shall retain all canceled PRCS Entry Permits for at least one year but not before the permit has been reviewed during an annual program audit. Permits will be used to facilitate the review of the PRCS program.

Any other documents required by the permit (such as a Hot Work Permit or MSDS) shall be considered to be a part of the PRCS Permit and shall be attached to the completed permit.

F. Annual PRCS program review

The PRCS program and all entries shall be reviewed on annual bases using the retained permits. The program shall be revised as necessary to ensure that employees participating in entry operations are protected from PRCS hazards.

NOTE: If no entry is performed during a 12-month period, no review is necessary.

1.306 ATMOSPHERIC HAZARDS

Atmospheric hazards present the greatest hazard to workers inside of a PRCS. Atmospheric hazards consist of oxygen deficiencies or enrichments, flammable and/or explosive vapors and gases, toxic vapors and gases, and combustible dust that obscures vision at a distance of five feet or less.

Before anyone enters a PRCS, a qualified person shall sample the atmosphere in order to detect any potential hazards. Testing of the space shall be performed through all areas of the space to ensure that no hazards exist anywhere within the space.

After all entrants have exited a PRCS for a lunch break or other such break in work , retesting of the space shall be performed and recorded before entering the space again.

1.307 ATMOSPHERIC TESTING

Atmospheric testing for confined space entry is required for two distinct purposes:

- Evaluation of the hazards of the PRCS
- Verification that acceptable entry conditions for entry into that space exist.

Entry Supervisors will provide entrants, or their authorized representatives, an opportunity to observe any testing of a PRCS prior to entry or subsequent to entry.

A. Testing equipment

Equipment that is used to evaluate the atmosphere within a PRCS shall be a direct-read instrument. A current AE equipment calibration sticker shall be affixed to the equipment verifying that the equipment has been calibrated according to the equipment manufacturer's specifications.

Verification (of calibration) test shall be performed and results documented before each work day requiring atmospheric testing. If instrument fails verification test it is to be tagged unusable, removed from service and taken to a qualified technician for repair and calibration.

Prior to each use, the test equipment shall be visually inspected to ensure that it is not damaged and that all warning and alarm devices are functional.

B. Duration of testing

Measurement of values for each atmospheric parameter will be made for at least the minimum response time of the test instrument specified by the manufacturer.

C. Evaluation testing

Entry Supervisors shall ensure that the atmosphere of a PRCS is analyzed using equipment sufficiently sensitive and specific to identify and evaluate any hazardous atmospheres that may exist or arise. This will ensure that appropriate PRCS entry procedures specific to the operation can be developed and acceptable entry conditions stipulated for that space. The internal atmosphere will be tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

1.	Oxygen content (between 19.5% and 23.5%)	OSHA Mandated
2.	Flammable gases and vapors.	OSHA Mandated
3.	Potential toxic air contaminants.	OSHA Mandated
4.	Airborne combustible dusts	Site Specific

D. Testing stratified atmospheres

When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope will be tested a distance of approximately 4 feet (1.22 m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress will be slowed to accommodate the sampling speed and detector response. The stratified atmosphere will be tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

1.	Oxygen content. (between 19.5% and 23.5%)	OSHA Mandated
2.	Flammable gases and vapors	OSHA Mandated
3.	Potential toxic air contaminants	OSHA Mandated
4.	Airborne combustible dusts	Site Specific

E. Testing frequency

Before a PRCS is entered, a qualified person shall test the atmosphere to ensure that the space is safe for entry. The results of the initial sampling shall be recorded on the PRCS Entry Permit. The test results shall be readily available for review by those workers who will be entering the space.

Any subsequent sampling that is requested by a qualified AE safety professional shall be documented on the Atmosphere Evaluation and Log.

Following the initial atmospheric test, continuous atmospheric monitoring is required by those inside of PRCSs during all entries.

After all entrants have exited a PRCS for a lunch break or other such break, retesting of the space shall be performed and recorded before entering the space again.

1.308 VENTILATION

If atmospheric hazards are detected, forced air ventilation shall be used to maintain the atmosphere at a safe level. Ventilation airflow shall be arranged such that it is directed into the immediate area where work is being performed. Forced air ventilation shall be started before personnel enter into the space The forced air shall continue throughout the work area until it can be demonstrated that a safe atmosphere can be maintained without the ventilation equipment.

1.309 ISOLATION OF THE PRCS AND CONTROL OF ENERGY SOURCES

Prior to entry, all PRCSs shall be isolated from any serious hazards or energy sources through the use of the AE's Lockout/Tagout Program.

Isolation and control procedures shall include at a minimum the following:

- All electrical circuits that serve the space being entered shall be locked out and tagged out to prevent exposure to energized parts.
- Mechanical equipment within the space shall be locked and tagged out.
- All fluid and gas lines that serve the space shall be isolated from the space by means of blinding (spool piece removed if applicable) or double block and bleed system, ensurng that no liquids or gases will pass through that point if the system is accidently activated..

1.310 PERMIT REQUIRED CONFINED SPACE RESCUE

The safety requirements of the PRCS program are in place to ensure that employees can safely enter and work inside of permitted spaces. The focus of the requirements is to ensure that hazards are either eliminated or controlled before entry is allowed. Unfortunately in spite of these precautions, hazards may arise quickly and unexpectedly that may prevent Authorized Entrants from escaping from the space without assistance.

Each AE work location that is involved with PRCSs shall establish procedures for summoning onsite or offsite rescue and emergency services and for preventing unauthorized personnel from attempting to perform a rescue. The purpose of a rescue plan is to establish a means for assisting Authorized Entrants from a space and to provide any additional emergency need that may be necessary. To ensure that the most effective means of notifying the rescue service is available, the method for contacting the location's designated rescue service shall be indicated on the PRCS Entry Permit prior to entry into a space. The Entry Supervisor shall ensure that all Authorized Entrants are aware of this information.

When establishing a procedure for providing rescue and emergency service, each location has several options from which to choose. The PRCS Rescue procedures listed in the following table describe the options available as well as any additional requirements for ensuring their availability and capability.

PRCS RESCUE PROCEDURES

Rescue Method	Requirement	Training
NON-ENTRY - PRCS Attendants can participate as rescuer		
Personal retrieval system	All PRCS Entrants shall wear a full-body harness with attached lifeline. The outside end of the retrieval line shall be attached to a fixed point or a lifting device in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be used whenever the vertical drop of a PRCS is 5 feet or greater.	All affected personnel shall be trained in: ▪ First Aid and CPR ▪ The proper use of a personal retrieval system. ▪ Understanding the elements of non-entry rescue including the prohibition for entering the space.
ENTRY INTO PRCS - Use of AE personnel		
Trained rescue personnel	Establish procedures for summoning rescue service and provide workers with the equipment needed for summoning help.	All affected personnel shall receive the following training: ▪ Proper use of personal protective equipment and rescue equipment for making rescues from PRCSs. ▪ Training specific to their assigned duty ▪ Authorized Entrant training ▪ First Aid and CPR All affected personnel shall practice making PRCS rescues once every 12 months by means of simulated rescue operations from representative spaces.
ENTRY INTO PRCS - Use of Offsite (non-AE) personnel		
Trained rescue personnel	Establish procedures for summoning rescue service and provide workers with the equipment needed for summoning help.	All non-AE rescue personnel shall be informed of the hazards related to the location's PRCSs and be provided with access to all PRCSs in order to develop rescue plans and practice rescue operations.

Subpart II
ENCLOSED SPACE GUIDELINES

This section applies only to Enclosed Spaces.

2.100 OVERVIEW

All provisions of the General Program (Sections 100-702) shall apply to this Subpart. Where requirements in this Subpart conflict with requirements in the General Program, the requirements of this Subpart shall take precedence.

2.101 DESCRIPTION OF ENCLOSED SPACES

Enclosed Spaces have the potential to cause serious injury; however, most of the hazards associated with these spaces can be easily controlled and abated. Enclosed Spaces shall be listed on the location's Confined Space Listing. See Enclosed Space definition section 200.

Examples of enclosed spaces include manholes and vaults that provide access to electrical transmission and distribution equipment.

2.200 CONTROL OF ENCLOSED SPACE HAZARDS

2.201 ENCLOSED SPACE HAZARDS

In most cases, Enclosed Spaces are not expected to contain hazardous atmospheres or hazards that cannot be easily controlled and eliminated. Whenever hazards do exist, they shall be abated and controlled prior to entry, or the entry shall be performed according to the PRCS guidelines.

2.202 ENCLOSED SPACE CARD

The AE Enclosed Space Card is a printed form that documents safe working conditions at Enclosed Space job sites. If hazards do not exist, an Enclosed Space Card, which confirms that the work site is safe for work, shall be completed and posted at the entry portal. Work may begin when it is posted.

Upon completion of work in an Enclosed Space, the Enclosed Space Card shall be filed at the work location of the employee-in-charge and retained for a period of one year.

NOTE: The Enclosed Space Card shall be a part of the confined space evaluation process.

2.203 ENCLOSED SPACE ATTENDANTS

When work is being performed inside of an Enclosed Space, an employee with current first aid training certification shall be posted outside of the space where the employee can be immediately available. This attendant shall be ready to render emergency assistance if there is a reason to believe that a life-threatening hazard or condition could occur within the space. When the work is being performed inside a manhole that contains energized electrical equipment, the attendant shall also be certified to perform CPR.

Enclosed Space Attendants are not restricted from performing other duties at the space. However, additional duties must not prevent or distract them from monitoring the safety of the personnel who are inside of the space. Enclosed Space Attendants are prohibited and shall not enter into any Enclosed Space other than for emergencies unless the work is being performed inside of a manhole. In this case the attendant may enter on brief occasions to provide assistance as long as there is no reason to believe that a hazard may exist in the space or if a hazard exists because of traffic patterns in the area of the opening used for entry. 1910.269 (e(7))see note referring to (t(3))

Communication shall be maintained as described in section 405 *Communication*.

2.300 ENCLOSED SPACE ENTRY

2.301 REMOVAL OF COVERS

Before any entrance cover is removed from an Enclosed Space, a qualified person shall determine whether or not it is safe to do so. The qualified person shall check for the presence of any atmospheric pressure or temperature differences and evaluate the enclosed space to determine if a hazardous atmosphere exists.

The qualified person shall test the area around the cover for the presence of any flammable or toxic gases or vapors. **Before removal of the cover, any hazardous conditions shall be eliminated**.

Whenever access covers of Enclosed Spaces are removed, the opening shall be promptly guarded by all of the following:

- Railing
- Manhole ring
- Temporary cover
- Manhole attendant.

All other means intended to prevent an accidental fall through the opening or to prevent objects falling into the space and striking workers inside are permissible.

2.302 SAMPLING ATMOSPHERIC HAZARDS

Before anyone enters an Enclosed Space, a qualified person shall sample the atmosphere with a verified-calibrated direct-read instrument to detect any potential hazards. Testing of the space shall be performed through all areas of the space to ensure that no gases have accumulated anywhere within the space. When a person(s) occupies an Enclosed Spaces, those inside shall continuously monitor that space.

Atmospheric hazards consist of oxygen deficiencies/enrichments, flammable/explosive vapors and gases, toxic vapors and gases, and combustible dust that obscure vision at a distance of 5 feet.

2.303 BRIEF MANHOLE ENTRY (ONE PERSON)

For the purpose of inspection, housekeeping, taking readings, or similar work, persons working alone may enter manholes for brief periods of time provided that it can be demonstrated that the person can be protected from all potential hazards. These entries do not require the completion of an *Enclosed Space Card.*

2.400 TESTING

2.401 TESTING EQUIPMENT

Equipment used to evaluate the atmosphere within Enclosed Spaces shall be calibrated-verified, direct-read instruments. A current AE equipment-calibration sticker shall be affixed to the test equipment, verifying that it has been calibrated in accordance with the equipment manufacturer's specifications.

Verification (of calibration) test shall be performed and results documented before each work day requiring atmospheric testing. If instrument fails verification test it is to be tagged unusable, removed from service and taken to a qualified technician for repair and calibration.

Prior to each use, the test equipment shall be visually inspected to ensure that it is not damaged and that all warning and alarm devices are functional.

2.402 TESTING SEQUENCE

Testing of an Enclosed Space atmosphere should be performed in the following sequence:

1. **Oxygen Concentration**. The level of oxygen in the atmosphere within an Enclosed Space must register between 19.5% and 23.5% by volume.

2. **Flammable Gases and Vapors**. The presence of explosive/flammable gases must not equal or exceed 10% of the lower flammable limit (LFL) of the suspect/specific material.

3. **Toxic Gases and Vapor**. Exposure to a substance in a single dose must not exceed the permissible exposure limit that is specified in 29 CFR 1910 (Z).

In order to ensure that all employees are adequately protected from the atmospheric hazards that may be inside Enclosed Spaces, the space should be tested from top to bottom to ensure that no gases have accumulated at any point within the space. Sampling should begin at the entrance point and proceed to the bottom or back of the space.

When monitoring for entries involving a descent into atmospheres that may be stratified, the atmosphere shall be tested at a distance of 4 feet in the direction of travel and 4 feet to each side.

2.403 TESTING FREQUENCY

Before an Enclosed Space is entered for the first time, a qualified person shall test the atmosphere to ensure that the space is safe for entry. The results of the initial sampling shall be recorded on the Enclosed Space Card. Test results shall be readily available for review by those workers who will be entering the space.

During all entries following the initial atmospheric test, those inside Enclosed Spaces shall continuously monitor the atmosphere.

After all entrants have exited an enclosed space for a lunch break, etc. , retesting of the space shall be performed & recorded before entering the space again.

2.404 TESTING DURATION

Measurements of values for each atmospheric parameter shall be made for at least the minimum response time of the test instrument as specified by the equipment manufacturer.

2.500 VENTILATION AND MONITORING

If atmospheric hazards are detected, forced air ventilation shall be used to maintain oxygen at a safe level and to prevent a hazardous concentration of flammable gases and vapors from accumulating. Continuous monitoring shall be used in conjunction with ventilation to ensure that a safe atmosphere exists.

Whenever forced air ventilation is used, it shall be started before entry is made and maintained long enough to ensure that a safe atmosphere exists before employees are allowed to enter the workspace. Ventilation airflow shall be arranged such that it is directed into the immediate area where work is being performed. The flow shall continue throughout the work period until employees vacate the space.

The air supply for continuous forced air ventilation shall be from a clean source. Care shall be taken to ensure that exhaust air is not mixed with intake air thereby increasing the hazards inside the Enclosed Space.

2.501 OPEN FLAMES

If open flames are used inside an Enclosed Space, testing for flammable gases and vapors shall be conducted **immediately before** the flame device is used and continuously thereafter.

2.600 ENCLOSED SPACE RESCUE

Enclosed Spaces are recognized as not likely to contain hazards that could cause serious personal injury. However, there is still a need for each work location to establish plans or procedures to rescue or remove persons from the space during emergencies.

Enclosed Space Attendants are the first line of protection for personnel who are working inside of a space; therefore, anyone assigned as an Attendant shall be trained to provide first aid and CPR.

Each attendant shall be provided with equipment at the Enclosed Space work site that will ensure the prompt and safe rescue of injured employees. The equipment must enable a rescuer to remove an injured employee from the Enclosed Space quickly and without further harm or injury to the injured employee or injury to the rescuer. Equipment designed to serve this function includes a full-body harness with an attached lifeline and a self-supporting mechanical winch.

APPENDIX A. CONFINED SPACE PROGRAM ASSESSMENT GUIDE

SCOPE

This component applies to Austin Energy (AE) employees who perform inspections, tests, examinations, or maintenance work in Confined Spaces. The component also applies to employees making decisions that affect employees working in Confined Spaces. The program's purpose is to ensure that adequate precautions have been taken to protect AE employees and vendors from the hazards typically associated with entry into Confined Spaces.

The following questions have been designed to determine:

- application of the Confined Space Program to a specific location.
- program design to ensure compliance with the AE Confined Space Program.
- verification of Program implementation.

1.0	APPLICATION QUESTIONS		
1.1	Has management assigned Confined Space Coordinator responsibilities?	☐ Y	☐ N
1.2	Have any Confined Spaces been identified at the facility?	☐ Y	☐ N
1.3	Have the identified Confined Spaces been evaluated for hazards associated with entry into the spaces?	☐ Y	☐ N
1.4	Has a location been designated for filing and storing all Confined Space documentation?	☐ Y	☐ N
1.5	Has the facility determined whether employees will enter Confined Spaces?	☐ Y	☐ N
1.6	Has the facility determined whether contractor's employees will enter Confined Spaces?	☐ Y	☐ N
1.7	How often do employees enter Confined Spaces?	☐ Y	☐ N
1.8	Have any injuries been associated with Confined Space entries?	☐ Y	☐ N
1.9	Are any Confined Space entry jobs currently in progress or are any planned for the near future?	☐ Y	☐ N

2.0	**PROGRAM DESIGN**		
2.1	Does the facility have a site-specific written Confined Space entry program that includes the following:		
	▪ AE Confined Space entry program or equivalent procedures	☐ **Y**	☐ **N**
	▪ Copies of a completed Confined Space evaluation form	☐ **Y**	☐ **N**
	▪ Provisions for posting signs and barriers	☐ **Y**	☐ **N**
	▪ List of designated Entry Supervisors	☐ **Y**	☐ **N**
	▪ Provisions and equipment necessary for rescuing entrants from Permit Required Confined Spaces	☐ **Y**	☐ **N**
	▪ Air monitoring criteria	☐ **Y**	☐ **N**
	▪ System to control work activities that could change the conditions of entry and require Space reevaluation (e.g., welding, grinding, painting).	☐ **Y**	☐ **N**
2.2	Does a process exist to identify and evaluate all Confined Spaces at the facility?	☐ **Y**	☐ **N**
2.3	Has a site Confined Space Coordinator been designated by location management to oversee program implementation and administration?	☐ **Y**	☐ **N**
2.4	Does a process ensure that the following personnel have been trained in their roles and responsibilities for entry into Confined Spaces?		
	▪ Entrants	☐ **Y**	☐ **Y**
	▪ Attendants	☐ **Y**	☐ **Y**
	▪ Authorizing Personnel	☐ **Y**	☐ **Y**
	▪ Entry supervisors	☐ **Y**	☐ **Y**
	▪ Confined Space Coordinators	☐ **Y**	☐ **Y**
2.5	Does a process track employee training/re-training?	☐ **Y**	☐ **N**
2.6	Have procedures been developed and implemented for rescuing entrants from Confined Spaces and for providing necessary emergency services to rescued employees?	☐ **Y**	☐ **N**
2.7	Are Enclosed Space and Permit Required entry certifications properly completed and filed?	☐ **Y**	☐ **N**
2.8	Is there a process to inform contractors of:	☐ **Y**	☐ **N**
	▪ Hazards associated with the Confined Space entry job		
	▪ Facility's Confined Space entry program		
	▪ Facility's emergency procedures for Confined Space entries?		
2.9	Does a process ensure that contract employees have been trained for Confined Space entry?	☐ **Y**	☐ **N**

3.0	**PROGRAM VERIFICATION**		
3.1	Using a walk-through of the facility or work location, verify that:		
	▪ Identified Confined Spaces have been adequately labeled or marked.	☐ **Y**	☐ **N**
	▪ No unidentified Confined Spaces exist.	☐ **Y**	☐ **N**
3.2	If possible, observe an Enclosed Space entry job in progress and verify that:	☐ **Y**	☐ **N**
	▪ Enclosed Space Entry Card was completed for the entry.		
	▪ The card is available to all entrants.		
	▪ Atmosphere was tested before entry.		
	▪ All entrants were informed of the pre-entry test results.		
	▪ Atmospheric testing is performed at least periodically.		
3.3	If possible, observe a Permit Required Confined Space entry job in progress to verify that:		
	▪ Permit is completed and posted at the entry portal.	☐ **Y**	☐ **N**
	▪ Attendant is stationed outside of the PRCS and is maintaining effective and continuous contact (visual or verbal) with the authorized entrants.	☐ **Y**	☐ **N**
	▪ Names of attendant and authorized entrants are listed on the permit.	☐ **Y**	☐ **N**
	▪ Authorizing employee named on the permit is readily available.	☐ **Y**	☐ **N**
	▪ Appropriate ventilation, personal protective equipment, and safety equipment were provided and used.	☐ **Y**	☐ **N**
	▪ All hazardous energy sources have been isolated by lockout/tagout.	☐ **Y**	☐ **N**
	▪ Authorized attendant and all authorized entrants have been trained.	☐ **Y**	☐ **N**
	▪ No compressed gas cylinders, internal combustion engines, or unattended compressed gas lines are inside the space.	☐ **Y**	☐ **N**
3.4	If the facility plans to use an outside rescue service in response to Confined Space emergencies, has that service been:		
	▪ Notified in writing that it has been designated for such response?	☐ **Y**	☐ **N**
	▪ Informed of the hazards associated with performing rescues from the Confined Spaces on-site?	☐ **Y**	☐ **N**
3.5	From a random selection of completed (closed out) PRCS Entry Permits, are the permits properly completed, closed out, and filed?	☐ **Y**	☐ **N**
3.6	Compare names on permits with training records to ensure that the appropriate level of training was given.	☐ **Y**	☐ **N**
3.7	Interview a representative number of employees to determine whether training was effective, including:	☐ **Y**	☐ **N**
	▪ Employees exposed to Confined Spaces		
	▪ Entrants, attendants, and/or authorizing personnel.		


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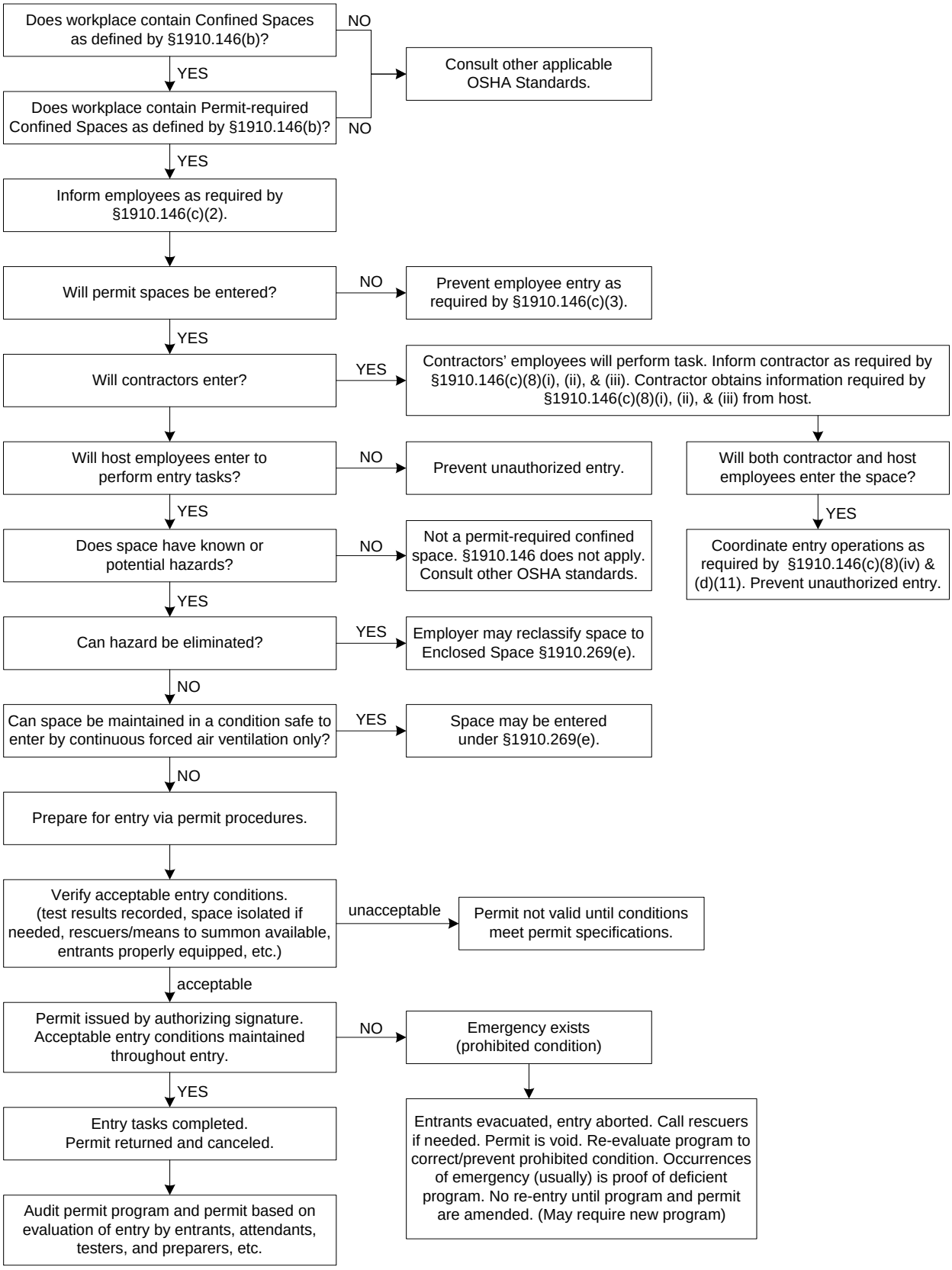
APPENDIX B. CONFINED SPACE DECISION FLOWCHART

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APPENDIX C. CONFINED SPACE LISTING

CONFINED SPACE LISTING							PAGE 1 OF ____
	VERBAL DESIGNATION	NUMERICAL	ASSESSED BY	PERMIT?	DATE	LOCATION	
				❑ Yes ❑ No			
				❑ Yes ❑ No			
				❑ Yes ❑ No			
				❑ Yes ❑ No			
				❑ Yes ❑ No			
				❑ Yes ❑ No			
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				❑ Yes ❑ No			
				❑ Yes ❑ No			


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APPENDIX D. PERMIT REQUIRED CONFINED SPACE ENTRY


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PERMIT REQUIRED CONFINED SPACE ENTRY PERMIT

This permit expires at the end of the assigned task identified on this permit or if any conditions of this permit are violated.

A. General

Permit No:	Initiation Date:	Expected Duration:
Location/Address (If Remote):		
Name of Entry Supervisor:	Reason for Entry:	

Authorized Entrants	Attendants/Shift	Fire Watch Attendants/Shift (hot work)

B. Known Hazards (list brief name/acronym of specific hazard)

❑ Mechanical hazards ❑ Engulfment hazards ❑ Other _____ ❑ Other _____

❑ Electrical hazards ❑ Materials harmful to skin ❑ Other _____ ❑ Other _____

Access Means Secured Open? ❑Yes ❑No	Hot Work Permit Required? ❑Yes ❑No	Red Tag No.

C. Initial Atmospheric Test

Person Testing Atmosphere:	Date/Time of Initial Atmospheric Sample:

Element	Initial Reading	Permissible	use pen: Current Reading	use pen: Time of Reading	Time Interval	Action Levels: Level	Action Levels: Unit
O2 (%)		>19.5%–<23.5%					
LEL (%)		<10%					
CO (ppm)		<35 ppm					
H_2S (ppm)		<10 ppm					
Other Contaminants (Specify)							

Atmospheric Conditions Safe for Entry? ❑ Yes ❑ No

D. Emergency/Rescue Services (Fill out before entry)

Service:	Mode of Communication:

E. Attendant/Entrant Communication Mode

❑ Verbal ❑ Radio Intrinsically safe? ❑ Yes ❑ No

❑ Hand ❑ Other Visually inspected? ❑ Yes ❑ No

F. Perform Job Safety Analysis (Check Required Equipment Items Needed)

Personal Protective Equipment

❑ Head Protection ❑ Life Line/Lanyard ❑ Respirator-Type:

❑ Hearing Protection ❑ Protective Clothing ❑ Self-contained Breathing Apparatus

❑ Eye/Face Protection ❑ Full Body Harness ❑ Other _____

Area Safety Equipment

❑ Supplied Air ❑ MSDS Required at Entry ❑ Fire Extinguisher - Type:

❑ Atmospheric Monitor ❑ Mechanical Ventilation ❑ Other _____

❑ GFCI ❑ Emergency Rescue Kit ❑ Other _____

G. Lighting Requirements

❑ Low Voltage Lights	Intrinsically safe?	❑ Yes	❑ No
❑ Explosion Proof Lights	Visually inspected?	❑ Yes	❑ No
❑ Other _____			

H. Special Tools/Equipment

❑ Other _____	Intrinsically safe?	❑ Yes	❑ No
❑ Other _____	Visually inspected?	❑ Yes	❑ No

I. Site Preparation Requirements

Work area isolated with signs and/or barriers?	❑ Yes	❑ No
All energy sources locked/tagged out?	❑ Yes	❑ No
All input lines capped/blinded?	❑ Yes	❑ No
If vessels: drained, flushed, neutralized, cleaned, and purged?	❑ Yes	❑ No
Ventilation initiated 30 minutes before entry?	❑ Yes	❑ No
Fire extinguishers on hand?	❑ Yes	❑ No
Fall hazards considered and prepared for?	❑ Yes	❑ No
Engulfment hazards considered and prepared for?	❑ Yes	❑ No
Other _____	❑ Yes	❑ No
Other _____	❑ Yes	❑ No

J. Other essential information concerning space

K. Non-permit Confined Space Certification

I certify that I have inspected the work area for safety and reviewed all safety precautions recorded on this permit, and have determined that this space is a non-permit confined space. _____ *Signature of Entry Supervisor*	Time/Date Work Started:

L. Permit-required Confined Space Certification

I certify that I have inspected the work area for safety and reviewed all safety precautions recorded on this permit. _____ *Signature of Entry Supervisor*	Time/Date Work Started:

M. Completion

❑ All tool/materials out ❑ Personnel cleared from space	Time/Date Work Completed:

_____
Signature of Entry Supervisor terminating work

N. Issues/comments

Record any unusual events or unexpected hazards that were encountered

O. Permit retention information

Permanent retention file:	Location:
Date filed:	Filed by:

APPENDIX E. ENCLOSED SPACE CARD

ENCLOSED SPACE CARD

1. Address:	Date:
2. Name of space:	
3. Name of circuit or equipment to be worked: List energized circuits in space:	
4. Name(s) of Entrant(s): _____ _____ _____ _____ _____ _____ _____ _____	
5. Atmospheric Sampling: Percent Oxygen:_____ Percent LEL:_____ Percent Toxic (CO, etc.): _____	6. Person Conducting Atmospheric Sample: _____ *Print* _____ *Sign*
7. Name of Rescue Service Organization:	**Emergency Telephone Number**:
I certify that I have inspected the work area for safety and reviewed all safety precautions recorded on this permit. Employee-in-charge: _____ _____ *Print* *Sign*	


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APPENDIX F. CONFINED SPACE PERMIT ENTRY LOG

CONFINED SPACE PERMIT ENTRY LOG							
PERMIT NUMBER	PERMIT LOCATION	REQUESTOR	MONITOR	INITIAL TEST BY	DATE	TIME	TIME CLEARED


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APPENDIX G. CONFINED SPACE ATMOSPHERE EVALUATION AND LOG

CONFINED SPACE ATMOSPHERE EVALUATION AND LOG

Use this form for extended monitoring.
Conduct sampling prior to each entry and monitor continuously while occupying the Confined Space.

Location:

ATMOSPHERIC EVALUATION

SAMPLES	TEST RESULTS		SAMPLES	TEST RESULTS	
Date: _____	O_2	_____%	**Date:** _____	O_2	_____%
Time: _____ AM PM	LEL	_____%	**Time:** _____ AM PM	LEL	_____%
Person Sampling	CO	_____PPM	**Person Sampling**	CO	_____PPM
_____	H_2S	_____PPM	_____	H_2S	_____PPM
SAMPLES	**TEST RESULTS**		**SAMPLES**	**TEST RESULTS**	
Date: _____	O_2	_____%	**Date:** _____	O_2	_____%
Time: _____ AM PM	LEL	_____%	**Time:** _____ AM PM	LEL	_____%
Person Sampling	CO	_____PPM	**Person Sampling**	CO	_____PPM
_____	H_2S	_____PPM	_____	H_2S	_____PPM

PERSONNEL LOG

ATTENDANT: _____ DATE: _____ START TIME: ____:____ STOP TIME: ____:____

ATTENDANT: _____ DATE: _____ START TIME: ____:____ STOP TIME: ____:____

ENTRANT'S NAME (PRINT)	COMPANY	DATE/TIME IN	DATE/TIME OUT

Printable copy for actual use is available on AE Safety & Risk Programs intranet page.

CITY OF AUSTIN

FALL PROTECTION AND PREVENTION PROGRAM

April 2008

Approved By:

Signature Signature on file Date 04/08
Garry Durante
Safety & Risk Management Manager

Signature Signature on file Date 04/08
Roger Duncan
General Manager

NOTE: This document is formatted for double-sided printing. Blank pages have been inserted where necessary to facilitate correct pagination.

TABLE OF CONTENTS


AUSTIN
ENERGY

100 INTRODUCTION

101 PROGRAM DESCRIPTION

Proper selection and use of fall protection equipment is necessary to reduce the risk of falls when employees climb or work on surfaces where potential fall hazards exist.

Falls and subsequent injury may occur because of

- Lack of fixed, guarded, work platforms
- Inadequate lighting or space to conduct tasks
- Difficult access because of the proximity of other equipment
- Lack of a solid base for portable ladders
- Carrying tools and equipment to elevated locations
- Inadequate training
- Improper use of fall protection equipment

This Austin Energy Safety Program provides guidelines for the implementation of an effective fall protection program.

The Fall Protection Program is based on:

- OSHA Standards, 29 CFR 1926.104, *Safety Belts, Lifelines, and Lanyards*
- OSHA Standards, 29 CFR 1926.959, *Lineman's Body Belts, Safety Straps, and Lanyards*
- OSHA Standards, 29 CFR 1926.269, *Electric Power Generation's Transmission and Distribution*
- OSHA Standards, 29 CFR 1910.21-30 and 29 CFR 1910.66-68

This safety program works in conjunction with, but is not limited to, the following AE and City of Austin policies and procedures:

- Personal Protective Equipment
- *Austin Energy Employee Safety and Risk Management Manual*, latest edition.
- *City of Austin Risk Management Manual*, latest edition.

102 PURPOSE

The purpose of this program is to establish minimum requirements for the protection of employees from falls. It shall be used to minimize employee exposure to hazards related to falls.

103 SCOPE

This program applies to all Austin Energy employees.

200 FALL PROTECTION TERMS AND DEFINITIONS

Term	Definition
Anchorage	A fixed structural member (such as beams, girders, columns) to which a personal fall arrest system can be securely attached
Anchorage connection	A component or subsystem attached to the anchorage that provides a secure and functional connection for a personal fall arrest system. Examples: ▪ Carabiners ▪ Eye bolts ▪ Rings ▪ Chokers
Climbing	Ascending, descending, or scaling structures such as ▪ Piping ▪ Girders ▪ Columns ▪ Beams ▪ Equipment ▪ Any other structure not specifically designed or designated as a walking or working surface
Engineered anchorages	Anchorages designed or approved by engineering to be used with a personal fall arrest system. They must meet ANSI and OSHA Standards.
Fall restraint system	A fall protection system that prevents the user from falling any distance. The system is comprised of either a body belt or body harness, along with anchorage, connectors, and other necessary equipment. The other components typically include a lanyard and can also include a lifeline and other devices. (§1926.751)
Free fall distance	The vertical distance traveled before the fall arrest system takes effect.
Horizontal lifeline	A line or cable secured to an anchorage used to allow horizontal movement with a personal fall arrest system.
Personal fall-arrest system	An assembly to halt a person in fall. It consists of a body harness and various other equipment that connect securely to an appropriate anchorage. The connection may use such equipment as: ▪ Lanyards with shock-absorbing devices ▪ Lifelines ▪ Self-retracting lifelines
Suspension trauma	The rapid onset of adverse physical symptoms to a person hanging in a full body harness (after approximately 15 minutes) such as light-headedness, palpitations, tremulousness, fatigue, nausea, dizziness, headache, sweating, weakness, loss of consciousness and even death, caused by venous pooling and oxygen deprivation to the brain, kidneys, and other organs.

Term	Definition
Vertical lifeline	A line or cable secured to an anchorage used to allow vertical movement with a personal fall arrest system.
Walking and working surfaces	Ladders, scaffolding, floors, stairs, and any other surfaces designed, engineered, or designated as a walking and working surface.

300 DUTIES AND RESPONSIBILITIES

The...	shall...
AE Safety & Risk Management Section	Develop a training program for authorized and affected employees. Provide a standard by which training is scheduled, conducted, and documented. Ensure retraining is available as needed. Assist managers, supervisors, operations, and maintenance personnel in the implementation of this program. Conduct annual audits to ensure that work practices and equipment are consistent with program requirements. Revise the program as necessary to ensure regulatory compliance.
AE Process Managers	Implement this program within their jurisdiction. Ensure that all fall protective equipment conforms to specified standards. Communicate expectations to their employees for complying with this program. Ensure that an adequate supply of fall protective equipment is available. Ensure that all affected workers have received training appropriate to their specific responsibilities. Provide guidance to AE employees in the selection, use, inspection, and maintenance of fall protection devices.
Division / Location Manager	Implement this program. Establish accountability for ensuring the use of fall protection.
Supervisors	Ensure that employees have been made aware of hazards that require the use of fall protection. Ensure that employees are using fall protection. Ensure that employees have received fall protection and prevention training.

The…	shall…
Employees	Be responsible for the care and maintenance of fall protective equipment. Be familiar with the requirements of the program. Be responsible for determining ways to eliminate, prevent, and control falls.
Trainer / Instructor	Develop, schedule, and deliver training to AE employees required to use fall protection equipment. Ensure that employee training has been properly documented.
Contractor / Vendor Sponsor (AE employee)	Ensure that contractors and their employees have been trained on this program. Be informed about the purpose and use of this program.

400 GENERAL PROGRAM REQUIREMENTS

401 ELIMINATING HAZARDS

Eliminating hazards is the first and best line of defense against falls. Safety must be designed into the work process and not added as an afterthought. Each exposure site and circumstance must be considered. Elimination means designing out fall hazards permanently, such as designing permanent stairs or other structures near areas that must be accessed frequently.

402 PREVENTING FALLS

Preventing falls is the second line of defense when hazards cannot be entirely eliminated. It involves changing the workplace so that prevention does not depend entirely on the worker's behavior and personal protective equipment. Fall protection is all those things done and used to keep from falling including structures such as:

- Temporary stairs
- Guard rails
- Barriers
- Travel restrictions.

Fall protection is also all those things done and used to keep objects from falling from above on employees.

403 CONTROLLING FALLS

Controlling falls is the last line of defense. It involves protecting and reducing the risk of injury by selecting the proper equipment and using it correctly.

Fall protection equipment includes equipment such as:

- Safety nets or harnesses
- Lanyards
- Shock absorbers
- Fall arresters
- Lifelines
- Anchorage connectors

The use of fall protection equipment to eliminate falls is a necessity, but the goal should be to eliminate fall hazards by using good preventive techniques so that fall protection will not be necessary.

404 PROTECTION PLAN

To ensure worker safety, the following guidelines should be followed closely to reduce exposure to the lowest achievable level.

- Use floor covers and standard railings to remove any fall hazard.
- Where covers or railings are not used to guard a floor opening, a designated attendant shall stand guard until the opening is closed or protected otherwise.
- Restrict travel in hazard areas.
- Use safety nets or personal fall arrest systems.
- Use ladders properly, according to manufacturers' instructions and applicable regulations. Refer to *Austin Energy Employee Safety & Risk Management Manual*, section 125 Ladders. Contact AE Safety & Risk Management for Ladder Training.

Ensure that employees know and understand the following:

- Body belts are **not** an acceptable means for a fall arrest system.
- Only lanyard snap hooks that have locking capability shall be used.
- Shock-absorbing lanyards are better than non-shocking-absorbing lanyards for arresting falls.

A. Overhead Work

If work is occurring in an overhead location where there is a risk of persons working or walking below, access to that lower area shall be restricted if there is a potential for any items to be dropped or fall from the higher work level. Barricade tape, signs, and rigid barriers are acceptable protection measures.

Remove all signs and barricades when work is completed.

Secure (tether) all tools and materials in use over an occupied area to the structure or person if the risk exists for being dropped to the lower level.

Provide toe boards on working platforms and scaffolds.

Put manhole guards in service as soon as possible to prevent objects from falling into a hole or vault.

B. Fall Protection On Equipment

Employees in aerial lifts and boom-type platforms shall be tied-off.

Employees on scissor lifts shall either be tied-off or protected by guardrails.

Only use a fall arrest system where equipment is designed to withstand the vertical and lateral loads caused by an arrested fall.

When a restraint system is used for fall protection from an aerial, scissor lift, or a boom-type elevating work platform, the lanyard and anchor shall be arranged so that the employee is not potentially exposed to falling any distance.

405 FALL PROTECTION AND PREVENTION ASSESSMENT

The Fall Protection and Prevention Assessment (see Appendix) will guide you in determining where hazards exist and how to eliminate them, and if they cannot be eliminated altogether, what level of protection for the employee is required.

500 USING FALL PROTECTION EQUIPMENT

501 FALL ARREST SYSTEMS

Use a fall arrest system under any of the following conditions:

- Climbing or working on a surface (other than a walking or working surface) with a potential fall hazard greater than 4 feet.
- Working with 4 feet of an exposed ledge with no means of preventing a fall (restraining devices or handrails).
- Working from a ladder above 4 feet high. Fall protection on ladders being used for transit only is recommended but not required, unless an appropriate anchorage support has been installed.
- Working from crane personnel bucket or basket.

Attach fall arrest systems to an appropriate anchorage.

Remain connected to a suitable anchorage point during the entire climb if possible, using horizontal or vertical lifelines or other equipment.

Inspect fall protection equipment before use. If equipment is degraded or damaged, remove it from service immediately.

If feasible, use a buddy system when climbing. (Have another person in the immediate area monitor the person climbing.)

Review the safety checklist before climbing or working at heights. Discuss any concerns with the supervisor before climbing.

Use a body harness for fall arrest. Do not use body belts.

Should a fall occur, remove the harness and lanyard from service and dispose of them.

When fall arrest systems are in use, a competent person shall develop an effective rescue plan specific to the work location and job being performed before work starts.

502 LANYARDS

When using lanyards, verify that they meet the following conditions:

- Are attached to the back D-ring on the safety harnesses
- Are equipped with a shock-absorbing device
- Are equipped with snap hooks that have locking capability
- Are adjusted to limit the free-fall distance to a minimum
- Are attached to an anchorage above the waist when possible
- Are attached directly overhead when possible.

NOTE: If used for work positioning or as a restraint, lanyards do not have to have shock-absorbers.

Do **not** tie knots in lanyards.

503 ANCHORAGES

For engineered fall-protection anchorages, verify that the anchorages are:

- Clearly identified
- Designed to meet OSHA and ANSI requirements.

For non-engineered anchorages, evaluate the following:

- Structure supporting the anchorage
- Material of which the anchorage is constructed.

Unacceptable Anchorages

The following are **not** acceptable anchorages for fall arrests:

- Small instrument lines
- Small electrical conduit
- PVC piping
- Fixed ladder rails or rungs
- Valve handles
- Electric metallic tubing
- Guardrails

600 INSPECTING FALL ARREST SYSTEMS

Inspect all fall arrest systems before use. If any are degraded or damaged, immediately remove them from service and dispose of them.

Inspect	For evidence of defect or damage, including:
Hardware D rings Buckles Connectors	Cracks Sharp edges Deformation Corrosion Chemical attack Excessive wear Alterations Excessive heating
Ropes Straps Lines Cables	Fraying Unsplicing Unlaying Kinking Knotting Broken or pulled stitches Excessive elongation Chemical attack Abrasion Excessive wear Excessive lubrication

700 FALL PROTECTION TRAINING

Employees whose work activities require the use of fall protections shall receive training that provides them with the understanding, knowledge, and skills necessary for the proper use of fall protection systems.

Fall protection training shall be provided for all new employees before they are exposed to hazards that may require them to use fall protection. Fall protection training shall also be provided to all existing AE employees who are unable to demonstrate the proper skill or understanding regarding the use of the fall protection system.

701 EMPLOYEE TRAINING

The following topics taught during initial fall protection training will enable employees to demonstrate the requisite understanding and skill in each topic:

- How to know when fall protection is necessary
- What types of fall protection systems are necessary
- How to properly use fall protection systems
- The limitations of fall protection systems
- The proper care, maintenance, useful life, and disposal of fall protection systems
- How to perform a fall hazard assessment and recognize hazards.

Employees who fail to demonstrate an understanding of the above training topics shall not be allowed to use fall protection systems until they are able to successfully demonstrate their understanding of each concept.

702 RETRAINING FREQUENCY

The appropriate level of retraining shall be provided for employees whenever one or more of the following conditions exists:

- Changes in the workplace render previous training obsolete.
- Changes in the type of fall protection systems cause the previous training to be obsolete.
- Inadequacies in an affected employee's knowledge or use of assigned fall protection system indicate that the employee has not retained the requisite understanding or skill.

703 TRAINING DOCUMENTATION

To certify that each employee has received and understands the fall protection training, the attendance at the training session shall be documented. Training documentation shall include the name of each employee who attended the training, the date that he or she attended, a summary of the training topics taught, and the signature of the instructor.

APPENDIX
FALL PROTECTION & PREVENTION ASSESSMENT

SCOPE

This assessment applies to Austin Energy employees who are exposed to fall hazards. The purpose of the assessment is to ensure that adequate precautions have been taken to reduce the risk of falls when employees climb or work on surfaces where potential fall hazards exist.

The assessment questions have been designed to determine:

- The applicability of the AE Fall Protection and Prevention Program to a specific work location.
- Compliance with the AE Fall Protection and Prevention Program.

FALL PROTECTION AND PREVENTION ASSESSMENT
1. Have you considered all reasonable means to eliminate the need to climb?
2. Can a ladder, mobile platform, or scaffolding be used instead of climbing?
3. Can the worker be restrained with a work-positioning lanyard when working near a ledge?
4. Are employees familiar with the use of protective equipment?
5. What types of communication are required before, during, and after the job?
6. What is the frequency and how many workers will be exposed to the hazard?
7. Which is the best climbing path to the work area?
8. What are the best anchorage points?
9. Should temporary anchorage connectors be left in place?
10. Are there other hazards in the area, such as ▪ Oily, wet, or other slippery surfaces ▪ Hot piping ▪ Water or steam leaks ▪ Rotating, moving, or energized equipment?
11. If a worker does fall, how will he or she be rescued?


AUSTIN
ENERGY

CITY OF AUSTIN

PERSONAL PROTECTIVE EQUIPMENT (PPE) PROGRAM

November 2014

Approved By:

Signature: signature on file in AE HR Date 11/17/14
Garry Durante, Safety & Risk Management Manager

Signature: signature on file in AE HR Date 11/17/14
Cheryl Mele, Deputy General Manager, COO

Signature: signature on file in AE HR Date 11/17/14
Kerry Overton, Deputy General Manager, CAO


AUSTIN
ENERGY

TABLE OF CONTENTS

100 INTRODUCTION

101 PROGRAM DESCRIPTION

This Austin Energy Safety & Risk Management program is intended to provide technical guidance regarding the use of Personal Protective Equipment (PPE). The PPE program is specific to protection for the head, eyes, face, torso, arms, hands, legs and feet. The program also provides guidelines for water safety. In addition to the PPE requirements of this program, other PPE requirements apply as defined in separate programs specific to hearing protection, respiratory protection, fall protection, and control of hazardous energy (lockout/tag-out).

The use of PPE should be considered only after attempts have been made to control workplace hazards through the use of engineering and administrative controls. The performance of a workplace hazard assessment is often needed to determine the type of PPE required. PPE will be provided, used, and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injury and/or illness.

The PPE program is based on the minimum requirements of the following standards **(or their latest version)**:

- OSHA Personal Protective Equipment, General Requirements (29 CFR 1910.132)
- OSHA Eye and Face Protection (29 CFR 1910.133)
- OSHA Head Protection (29 CFR 1910.135)
- OSHA Occupational Foot Protection (29 CFR 1910.136)
- OSHA Electrical Protective Devices (29 CFR 1910.137)
- OSHA Hand Protection (29 CFR 1910.138)
- OSHA Electric Power Generation, Transmission, and Distribution (29 CFR 1910.269)
- OSHA Safety and Health Regulations for Construction (29 CFR 1926)
- ASTM F 2413-11, *Impact Resistant Footwear*
- ANSI Z87.1 2010, *American Standard for Occupational and Educational Personal Eye and Face Protection Devices*
- ANSI Z89.1-2009, *American National Standard for Industrial Head Protection*.

The PPE program works in conjunction with, but is not limited to, the following Austin Energy (AE) and City of Austin (COA) programs and processes:

- AE Respiratory Protection Program
- AE Hearing Conservation Program
- AE Control of Hazardous Energy Program
- AE Fall Protection Program
- AE Employee Safety & Risk Management Manual
- AE Guideline and Work Process: Personal Protective Equipment
- COA Risk Management Manual.

102 PURPOSE

The purpose of the PPE Program is to protect AE employees, contractors, and visitors to AE work areas from the risk of injury and/or illness by creating a barrier against workplace hazards.

103 SCOPE

The program applies to **AE employees** who:

- Perform inspections, tests, examinations, maintenance, construction, operations, or observations within work areas where there is a potential of personal injury occurring due to exposure to environmental conditions and work activities.
- Make decisions affecting the procurement and use of PPE that will be used by AE personnel.
- Make decisions related to the procurement and/or oversight of contractor work projects.
- Make decisions affecting the procurement and use of PPE that visitors will use in AE work areas.

The program applies to **contracted employees** who:

- Perform inspections, tests, examinations, maintenance, construction, operations, or observations within work areas where there is a potential of personal injury due to exposure to environmental conditions and work activities.

200 PPE TERMS AND DEFINITIONS

Term	Definition
Energized	Electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of earth in the vicinity.
Equipment (electric)	A general term including material, fittings, devices, appliances, fixtures, apparatus, and such that is used as part of or in connection with an electrical installation.
Exposed Part	Not isolated or guarded.
Hazard Assessment	A survey to assess the likelihood of injury or illness that may occur in the work place or at a job site to any part of the body (such as the eye, face, head, torso, leg, foot, hand, or respiratory system). Specific PPE may be necessary to prevent injury or impairment in the function of any part of the body through absorption, inhalation, or physical contact.
Long-sleeved Shirt	A long-sleeved shirt that complies with AE policy.
Undergarments	An optional AE-approved short-sleeve t-shirt made of 100% cotton or flame-resistant material.
Minimum Approach Distance	The closest distance an employee is permitted to approach an energized or grounded object.
Personal Protective Equipment (PPE)	All protective clothing, respiratory devices, protective shields, barriers, and other such items that are designed to create a barrier against workplace hazards.

Term	Definition
Qualified Employee	A person who possesses a demonstrated knowledge based upon training and demonstrated skill, or a combination thereof, and is designated by location management to perform an assigned task. -or- A person who is knowledgeable in the construction and operation of the electric power generation, transmission, and distribution equipment involved, along with the associated hazards and ways to mitigate those hazards.
Supervisor or Crew Leader	For the purposes of AE's PPE Program, the person who is on location and responsible for the completion of the work. This term is used regardless of the person's current job title used for payroll purposes.
Reaching Distance	An estimated measurement of the distance from which an employee could contact an energized part following an intentional or unintentional action. This distance is generally considered to be the following: ▪ if working on the ground: the employee's height plus the length of any conductive object carried ▪ if working while reaching over his or her head: the employee's total possible reach plus the length of any conductive object carried.
Work Area	A defined pre-existing area such as a laboratory, workshop, substation, manhole, vault, switchyard, transformer vault, or boiler. -or- A defined temporary job site where physical operations, maintenance, or construction work processes are being performed and where the potential for injury to an employee exists. A qualified employee defines the dimension of a temporary job site.

300 DUTIES AND RESPONSIBILITIES

The...	Shall...
Safety and Risk Management Section	Ensure the development, implementation, and administration of this safety and risk management program. Provide technical direction and support to AE locations for the implementation of this safety and risk management program. Establish PPE specifications and prescribe standards with which PPE shall comply. Provide training and technical assistance in the selection, use, inspection, and maintenance of PPE. Develop, schedule, and deliver training to AE personnel for enabling implementation of this safety and risk management program. Schedule and conduct PPE program assessments in accordance with this safety and risk management program. Maintain a current written program document by revising and re-issuing this written document, as necessary.

The...	Shall...
Management	Ensure implementation of this safety and risk management program. Communicate expectations for complying with this safety and risk management program. Designate an individual to oversee implementation of this safety and risk management program. Ensure that all affected employees have received training appropriate to their specific responsibilities. Ensure that all resources necessary to implement this safety and risk management program are available. Ensure that PPE program assessments are scheduled and conducted in accordance with this safety and risk management program.
Supervision	Implement this safety and risk management program uniformly and ensure resources are constantly provided to maintain it. Perform a hazard assessment to determine the type of PPE to be used. Conduct annual audits to determine employee compliance and the need for retraining. Ensure that all affected employees are trained on the selection, use inspection, and maintenance of PPE. Ensure that defective or damaged equipment is immediately replaced. Provide documentation of the tests and inspections required under AE's PPE Program. Seek assistance from AE's Safety and Risk Management Section to evaluate hazards. Provide appropriate PPE and make it available to affected AE employees. Recommend engineering and design changes, where possible, to reduce the need for PPE. Ensure that all PPE is visually inspected before each use.
Affected Employees	Be knowledgeable of and comply with the requirements of this safety and risk management program and all other applicable safety rules, processes, and such. Wear PPE as required. Attend and participate in required training. Care for, clean and maintain PPE as required. Visually inspect all PPE before each use. Inform the supervisor of the need to repair or replace PPE.
Contractor/Vendor/ Visitor Sponsor	An AE employee that ensures that contractors/vendors/visitors are informed of the requirements of this safety and risk management program.
Contractor/Vendor/ Visitor	Follow the guidelines established in this safety and risk management program at all times when performing work or visiting at any AE location.

400 PROGRAM REQUIREMENTS

The use of PPE is intended as a means of worker protection only after attempts have been made to control and eliminate hazards through the implementation of engineering controls, administrative controls, and work practices that limit personnel exposure to known and potential hazards.

401 PROVISIONS OF PPE

All employees shall be provided with PPE that is safe and designed to protect them from hazards commonly associated with work that is performed within AE. AE will normally provide PPE at no cost to employees; however, AE may not provide cost-free PPE that is considered to be *personal in nature.* Personal-in-nature equipment includes things such as prescription safety glasses, work boots, and items of clothing that are not typically specified for use as a result of a work area hazard assessment. (Refer to AE's Guidelines and Work Processes, located on AE's intranet site, regarding personal protective equipment.) The cost of personal-in-nature equipment may not be fully subsidized by AE due to the fact that employees may use this equipment away from work.

402 WORK AREA HAZARD ASSESSMENT

The use of the PPE shall be based upon a work area assessment of the hazards to which employees will be exposed during the course of their work. The performance of a work area hazard assessment is a continual process that involves the identification of hazards in the work area to which employees may be exposed. These hazards are categorized as:

- Hazards that exist because of the general nature of the work environment and job function.
- Hazards that is specific to a particular job or work application.
- Hazards that result from changing conditions associated with work performance and/or work environment.

In each case, PPE shall be identified for use that will offer protection to affected employees based upon the type of hazards that may be present.

403 GENERAL WORK HAZARDS

The location/work group management shall ensure that work area hazard assessments are performed for general employee exposure. This level of assessment addresses common hazards to which employees may be exposed due to their work environment and functional work assignments. Work area hazard assessments for exposure to general conditions shall be documented on the AE PPE Work Area Hazard Assessment form (Appendix B) or recorded in the work groups' maintenance management system (MMS). This documentation shall be retained and filed by the workgroup for which it applies.

404 SPECIFIC JOB HAZARDS

In order to determine the types of hazards that may be associated with specific jobs, the supervisor/crew leader shall perform a work area hazard assessment to determine the type of PPE necessary for each job based on actual or potential hazards. Job-specific hazard analysis shall be documented on the AE PPE Work Area Hazard Assessment form.

Completed PPE Work Area Hazard Assessments forms shall be reviewed by the supervisor or their designee. The supervisor/workgroup shall retain a copy. If a determination has been made that hazards are or may be present during the performance of work, the use of PPE shall be required for all exposed or potentially exposed personnel. The PPE used shall be designed to protect employees from the noted

hazards. The person performing the work area hazard assessment shall communicate PPE requirements to all affected personnel at the pre-work or tailgate meeting. That person shall also ensure that all employees have the appropriate PPE and are wearing it.

405 CHANGING CONDITIONS HAZARDS

During the performance of a specific job, it is likely that changing conditions associated with the work or work environment may alter the originally established PPE requirements. Every employee must maintain an awareness of changing work conditions that may affect the type of PPE being used and shall notify his or her supervisor or crew leader. When conditions warrant, the crew supervisor/leader shall re-evaluate the type of PPE being used and complete a new PPE Work Area Hazard Assessment form. Whenever the PPE requirements for a specific job change, the supervisor/crew leader shall inform each affected person of the changes.

AE Safety and Risk Management professionals are available to assist in the selection of PPE on an as-needed basis.

Whenever it has been determined that a PPE Work Area Hazard Assessment for a specific job has not been done, work shall stop until the supervisor/crew leader conducts the work area hazard assessment. The supervisor/crew leader shall also inform the affected personnel of the type of hazards present and the PPE requirements for the job before the resumption of work.

406 DUTY TO ACT

In accordance with AE Safety Guiding Principles*, We are responsible for our own safety, our co-workers' safety, and the public's safety*. Therefore, each employee shall have the authority to require all co-workers to use and follow the PPE requirements that have been established for their work. When employees choose not to comply with the PPE requirements, they shall be asked to leave the work area. All employees shall have the authority to delay the start of work or stop work until all noncompliant employees are out of the work area. When the noncompliant employees are out of the work area, the work can begin or continue.

Supervisors and crew leaders shall be accountable for immediately correcting the situation whenever specified PPE requirements are not being practiced. This may include, but not be limited to, requiring the employee to immediately leave the work area or implementing COA's corrective discipline policy.

407 PPE PROGRAM ASSESSMENT

AE Safety and Risk Management, affected managers or their designees shall conduct annual PPE program assessments at the locations and operations that require the use of personal protective equipment. The purpose of the annual assessment is to validate the program, determine the level of compliance, and identify deficiencies requiring corrective action. Deviations from the requirements defined in this program and the referenced documents shall be identified and corrected within a reasonable amount of time. PPE program assessment questions are contained in Appendix A.

500 PERSONAL PROTECTIVE EQUIPMENT TRAINING

Employees whose work activities require the use of PPE shall receive training that provides them with the understanding, knowledge, and skills necessary for the proper use of PPE.

PPE training shall be provided for all new employees before they are exposed to hazards that may require them to use the equipment. PPE training shall also be provided to all existing AE employees who are unable to demonstrate the proper skill or understanding regarding the use of the equipment.

501 EMPLOYEE TRAINING

The following topics taught during initial PPE training will enable employees to demonstrate the requisite understanding and skill in each topic:

- How to know when PPE is necessary
- What types of PPE are necessary
- How to properly put on, remove, adjust, and wear PPE
- The limitations of PPE
- The proper care, maintenance, useful life, and disposal of PPE
- How to perform a hazard assessment and recognize hazards.

Employees who fail to demonstrate an understanding of the above training topics shall not be allowed to use PPE until they are able to successfully demonstrate their understanding of each concept.

502 RETRAINING FREQUENCY

The appropriate level of retraining shall be provided for employees whenever one or more of the following conditions exist:

- Changes in the workplace render previous training obsolete
- Changes in the type of PPE cause the previous training to be obsolete
- Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

503 TRAINING DOCUMENTATION

To certify that each employee has received and understands the PPE training, the attendance at the training session shall be documented. Training documentation shall include the name of each employee who attended the training, the date that he or she attended, a summary of the training topics taught, and the signature of the instructor.

600 HEAD PROTECTION

601 INDUSTRIAL PROTECTIVE HELMETS (HARD HATS)

Whenever AE employees are exposed to the danger of head injury from impact or bumping, falling or flying objects, or electrical shock or burn, they shall wear approved protective helmets. All helmets used by employees shall be AE issued. Protective helmets shall conform to the specification of ANSI Z89.1-2009 or latest version, *American National Standard for Industrial Head Protection.*

For employees exposed to **electrical hazards** from shock or burn, protective helmets shall consist of a Class E helmet rated at 20,000 volts. All helmets and their suspension systems shall be inspected regularly for hairline cracks or other defects. No field modifications shall be made to the helmet. They shall be replaced immediately if any defects are found. All helmets shall be replaced every five years or according to manufacturers' recommendations.

602 HARD HAT DECORATION

Nonmetallic stickers or other markings with approved adhesives may be affixed to helmets/hard hats as permitted by the supervisor. The helmet/hard hat manufacturer shall approve adhesives on a case-by-case basis. A copy of the documentation that supports the manufacturer's approval shall be on file with the AE Safety and Risk Management Section.

All helmets/hard hats shall be kept clean and free of markings (such as paint and permanent markers). Approval must be obtained from the AE Safety and Risk Management Section for any markings on helmets.

603 FLASH HOODS

Whenever AE employees are exposed or have the potential to be exposed to electrical arcs or a resulting fire hazard, they shall wear one of the following flash hoods:

- A full-head flash hood made of a flame-retardant material such as Nomex®, which incorporates a full-face shield and is used in conjunction with an approved hard hat.
- A form-fitting Balaclava (race car driver hood) with individual eye openings that cover the entire head and neck in conjunction with safety glasses and face shields.

700 EYE AND FACE PROTECTION

All protective eye and face equipment used by AE personnel shall be labeled and certified by the manufacturer to comply with ANSI Z87.1 2010 or latest revision, *American National Standard for Occupational and Educationa*l *Personal Eye and Face Protection*. Eye and face protection shall always be used when there is a risk for eye/face injury.

701 CONTACT LENSES

Contact lenses can be used in conjunction with appropriate eye and face protection, unless their use creates an additional hazard.

702 CORRECTIVE SPECTACLES (PRESCRIPTION EYEGLASSES)

When employees using corrective spectacles (prescription eyeglasses) require eye protection, they shall use one of the following methods for personal eye protection:

- Spectacles with protective lenses providing optical correction eyeglasses with detachable side shields. The side shields shall always be used when eye protection is required. (Safety spectacles require special frames. Combination of normal street wear frames with safety lenses is not adequate protection.)
- Goggles or safety glasses worn over corrective spectacles without disturbing the adjustment of the spectacles.
- Goggles that incorporate corrective lenses mounted behind the protective lenses.

703 FACE SHIELDS

Whenever AE personnel are exposed or have the potential to be exposed to chemical splash hazards (for example, acids and caustics) or flying particles resulting from grinding, chipping, or blasting, they shall wear full face shields. Face shields shall be constructed of Lexan or similar material and used in conjunction with hard hats and other appropriate PPE. Face shields alone do not provide adequate eye protection. An appropriate type of eye protection shall be used in conjunction with face shields as listed below.

Actual or Potential Hazard	Requirement
Chemical splash, such as acids and caustics	Face shield and chemical goggles (see the section *Goggles* for requirements)
Flying particles resulting from grinding, chipping, or blasting	Face shield and goggles or face shield and safety glasses

704 SAFETY GLASSES

Whenever there is a potential for exposure to hazards created by the work being performed, employees shall wear impact-resistant safety glasses with attached side shields.

EXCEPTION: If the environment contains hazards such as blowing dust or debris, then goggles shall be used.

The lenses of the safety glasses may be tinted for UV protection and employee comfort. However, tinting shall not contribute to additional hazards, such as low-light conditions.

705 GOGGLES

Employees shall use the appropriate goggles as protection from the hazardous conditions as listed below:

Actual or Potential Hazard	Requirement
Chemical splashes, such as acids and caustics	Indirect vented or non-ventilated chemical goggles
Fumes, mist, or vapor	Non-ventilated goggles
Dust or flying particles	Direct or indirect vented goggles

The goggles shall fit securely over any other type of eyeglasses being worn. They shall completely enclose the eye socket area.

706 WELDING AND CUTTING

When welding or cutting, employees shall wear the appropriate eye and face protection for the work that is being performed. Refer to OSHA Standard 1910.133(a)(5) when selecting appropriate shade number for protection against radiant energy.

800 TORSO PROTECTION

801 ON OR NEAR EXPOSED, ENERGIZED PARTS – 10,499 FAULT AMPS AND LESS

Employees that are exposed to hazards due to flame, flash, or arc, with 10,499 amps available fault current or less, shall wear an AE-approved, long-sleeved flame-resistant shirt. The shirt shall be buttoned completely (except the collar button), and the sleeves shall be completely rolled down and buttoned at the wrist. The shirttails shall be kept tucked in. In addition, undergarments, such as optional T-shirts worn under the AE-approved long sleeve shirt must be made of 100% cotton or flame-resistant material to prevent heat transfer to the upper body.

AE-approved fire-retardant raingear shall be worn when working on or near energized lines or equipment during inclement weather.

For those areas where available fault current is over 10,500 amps (such as network protectors, 480v services, and switch cabinets), employees shall wear flash suits or switching jackets made of a flame-resistant, arc-rated material.

802 CHEMICAL AND SPLASH

Employees shall wear approved chemical-resistant torso protection when exposed to chemical hazards that could injure their bodies. The type of protection shall be determined in the hazard assessment and shall comply with Material Safety Data Sheet (MSDS) of the chemical(s) being used.

803 HEATED MATERIALS

Whenever AE personnel might be exposed to hazards resulting from heated materials that could splash or spill (such as molten metals), they shall wear protective garments, such as leather aprons, sleeves, and/or leggings.

900 ARM AND HAND PROTECTION

901 SHORT-CUFF LEATHER WORK GLOVES

In addition to other required PPE, employees shall wear leather work gloves when exposed to hazards such as abrasions, splinters, punctures, frostbite, and cuts to the hands.

902 LONG-CUFF LEATHER WORK GLOVES

In addition to other required PPE, employees shall wear leather gloves with gauntlets that extend over the wrist when exposed to hazards that may lead to injury of the hand and wrist (such as climbing wooden poles).

903 INSULATING PROTECTIVE GLOVES (RUBBER GLOVES)

A. RUBBER GLOVES (480 VOLTS AND LESS)

AE employees shall wear appropriate rubber gloves (see Insulating Rubber Gloves Ratings table in the section *Periodic Electrical Tests for Rubber Gloves*) when:

- working within reaching or falling distance from energized electrical parts under 480 volts
- working on secondary voltages within the distribution system.

B. RUBBER GLOVES (OVER 480 VOLTS)

AE employees shall wear appropriate rubber gloves (see Insulating Rubber Gloves Ratings table in section *Periodic Electrical Tests for Rubber Gloves*) when working within reaching or falling distance from energized electrical parts over 480 volts or any electrical equipment that may become energized at voltages greater than 480 volts.

In addition, appropriate insulating rubber gloves shall be worn when working on or within reaching or falling distance from any conductor or piece of electrical equipment that has not been tested for DEAD with an approved meter and grounded.

C. CARE AND USE OF RUBBER GLOVES

Rubber gloves shall be maintained in a safe, reliable condition. They shall be inspected for damage before use and immediately following any incident that can reasonably be suspected of having caused damage. The inspection shall include both air test and visual inspection.

Rubber gloves with any of the following defects may not be used:

- A hole, tear, puncture, or cut
- Ozone cutting or ozone checking (the cutting action produced by ozone on rubber under mechanical stress into a series of interlacing cracks)
- An embedded foreign object
- Any change in the glove's texture, such as swelling, softening, hardening, or becoming sticky or inelastic
- Any other defect that damages the insulating properties.

Any rubber glove found to have defects that might affect its insulating properties shall be removed from service and returned for testing as specified in OSHA Standard 29 CFR 1910.137 (b)(2)(viii) & (b)(2)(ix).

Rubber gloves shall be cleaned at the end of the shift prior to storing them.

Rubber gloves shall be stored in a location and manner that protects them from light, temperature extremes, excessive humidity, ozone, and other injurious substances and conditions.

- Rubber gloves shall be stored in approved bags in a fully extended position; they shall not be folded.
- Bags shall be either hung up or placed in a special compartment. They shall not be placed where other tools or equipment can damage them.
- No items shall be placed in the rubber glove bag other than the rubber gloves and protector gloves.

Protector gloves shall be worn over rubber gloves.

EXCEPTION: Under limited-use conditions, protector gloves need not be used with Class 0 gloves where small equipment and parts manipulation necessitate unusually high finger dexterity. Extra care is needed in the visual examination of the glove and in the avoidance of handling sharp objects.

904 PERIODIC ELECTRICAL TESTS FOR RUBBER GLOVES

Rubber gloves shall be subjected to periodic electrical tests. Test voltages and the maximum intervals between tests shall be in accordance with OSHA Standard 29 CFR 1910.137. The tests shall be conducted before first issue and every 6 months thereafter or more often if field conditions warrant. If

the rubber gloves have been electrically tested but not issued for service, they may not be placed into service unless they have been electrically tested within the previous 12 months.

Employees may not use rubber gloves that do not pass inspections or electrical tests.

The supervisor shall maintain documentation, which certifies that equipment has been tested in accordance with the requirements. The certification shall identify the equipment that passed the test and the date it was tested.

NOTE: Marking of equipment and entering the results of the tests and the dates of testing into logs are two acceptable means of meeting this requirement.

Insulating Rubber Glove Ratings

Class of Gloves	Voltage
0	Up to 5,000
1	Up to 10,000
2	Up to 20,000
3	Up to 30,000
4	Up to 40,000

1000 LEG PROTECTION

While in a work area (as defined in this document), all AE employees, contractors, and visitors shall wear long pants in addition to the other clothing articles and PPE required for the specific environment.

1001 IMPACT LEGGINGS

Employees shall wear appropriate leggings when operating equipment such as string trimmers, weed eaters, or other equipment that may expose them to flying debris hazards.

1002 CUT HAZARD PROTECTION

Employees shall wear appropriate chaps or leggings when using a machete, chain saw, or other cutting operations except when the employee is using such equipment from the bucket on a bucket truck.

1003 CHEMICAL HAZARD PROTECTION

Employees shall wear approved chemical-resistant torso protection that provides leg protection (such as full-length apron, jacket, coveralls, or full-body suit) if exposed to chemical hazards that could cause leg injury.

1004 FOOT PROTECTION

Safety-toe footwear is required as basic foot protection for all employees who are exposed to foot hazards, such as falling, dropped, or rolled heavy loads or objects. Safety footwear shall comply with ASTM F 2413-11or latest revision, and shall meet AE specifications.

When work is performed in the vicinity of live parts where the possibility of an arc exists, employees shall ensure that their protective footwear does not have exposed metal toe guards.

Employees shall wear approved chemical-resistant footwear if exposed to chemical hazards that could cause foot injury.

Employees must wear footwear that have *defined heels* when they are climbing utility poles, ladders, or performing other duties where the existence of a defined heel will enable the employee to have assured (no-slip) footing.

Employees shall wear approved, puncture-resistant footwear if their job duties expose them to sharp objects that may penetrate the sole.

1100 WATER SAFETY

Whenever AE personnel are working over, near, or on water, where the danger of drowning exists, the following PPE shall be available and in use at all times:

- **U. S. Coast Guard-approved personal flotation device**. Each person shall be provided with a personal flotation device or buoyant work vest before work is conducted. The personal flotation device or work vest shall be inspected before and after each use for defects. Defective personal flotation devices shall not be used.
- **Ring buoy**. Ring buoys with at least 90 feet of rope shall be provided and readily available for emergency use. The distance between each buoy shall not exceed 200 feet. The rope on the ring buoys shall be replaced annually.
- **Boat or skiff**. At least one lifesaving boat or skiff shall be immediately available for emergency rescue purposes.

An employee may cross streams or other bodies of water only if a safe means of passage, such as a bridge, is provided.

1200 MINIMUM APPROACH DISTANCE WITHOUT PPE

Without the appropriate PPE in use at all times, employees shall maintain a minimum distance from energized lines as listed in the following table. The voltage ranges (column 1) determine the distance required.

AC Live-line Work Minimum Approach Distance

	Distance			
Nominal Voltage Phase to Phase	**Phase-to-Ground Exposure**		**Phase-to-Phase Exposure**	
kV	feet–inches	meters	feet–inches	meters
0.05 to 1.0	Avoid contact	Avoid contact	Avoid contact	Avoid contact
01.1 to 15.0	2–1	0.64	2–2	0.66
15.1 to 36.0	2–4	0.72	2–7	0.77
36.1 to 46.0	2–7	0.77	2–10	0.85
46.1 to 72.5	3–0	0.90	3–6	1.05
72.6 to 121	3–2	0.95	4–3	1.29
138 to 145	3–7	1.09	4–11	1.50
161 to 169	4–0	1.22	5–8	1.71
230 to 242	5–3	1.59	7–6	2.27
345 to 362	8–6	2.59	12–6	3.80
500 to 550	11–3	3.42	18–1	5.50
765 to 800	14–11	4.53	26–0	7.91

Note 1. These distances take into consideration the highest switching surge an employee will be exposed to on any system with air as the insulating medium and the maximum voltages shown.

Note 2. The clear live-line tool distance shall equal or exceed the values for the indicated voltage ranges.

For additional information concerning live-line work minimum approach distance, refer to OSHA Standard 29 CFR 1910.269(l)(10).

APPENDIX A. PPE PROGRAM ASSESSMENT

SCOPE

This component applies to AE employees who perform PPE Work Area Program Assessments and those who select and use PPE.

PPE provides a measure of control that helps to ensure the safety of employees where other controls are not feasible. The equipment's ability to protect is heavily dependent upon accurately identifying hazards and on the employee's correct selection and use of PPE.

This PPE program assessment covers normal work operations where there is a potential for personal exposure to hazardous conditions.

This program assessment does not specifically address:

- Hearing Conservation. This is covered under the Hearing Conservation Program Assessment.
- Respiratory Protection. This is covered under the Respiratory Protection Program Assessment.
- Fall Protection. This is covered under the Fall Protection Program Assessment.

The PPE Program Assessment questionnaire has been designed to determine:

- Proper application of the PPE program at a specific work location.
- Proper program design to ensure compliance with the AE PPE Program.
- Verification of program implementation.


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PPE PROGRAM ASSESSMENT

1.0	PPE Program Application
1.1	Have tasks/activities been evaluated to determine if any of the following potential hazards exist on site: • Impact to the head? • Injury to the head/arm? • Injury to the foot/leg? • Injury to the eye/face?
1.2	Have tasks/activities been evaluated to determine if physical or chemical hazards on site can potentially damage eyes?
1.3	Have tasks/activities been evaluated to determine if skin contact could occur with the following injurious agents on site: • Hazardous physical agents? • Hazardous chemical agents? • Hazardous biological agents?
1.4	Have tasks/activities been evaluated to determine if there is a hazard to the whole body for which PPE may be required, such as: • Heat Stress/Hypothermia? • Work on or Near Water (Drowning Risk)? • Poison Ivy?
1.5	Has a list been developed of tasks/activities requiring the use of PPE?
2.0	PPE Program Design
2.1	Is there a process to provide written certification that workplace hazards requiring the use of PPE have been evaluated?
2.2	Is there a process to ensure that PPE is correctly sized for the employee and correct for the types of hazards encountered: • Physical? • Biological? • Chemical?
2.3	Is there a process to ensure that head, eye, face, and foot PPE complies with applicable ANSI standards?
2.4	Is there a process to ensure that employees are informed of the proper selection and use of the specific PPE needed for their work?
2.5	Is there a process to identify and remove from service any damaged or defective PPE?
2.6	Is there a process to ensure that employees select and use proper PPE?
3.0	PPE Program Verification
3.1	Using walkthroughs and documentation review, verify that for hazards requiring PPE use: • The hazards have been identified and effectively addressed. • Certified hazard evaluations are available.
3.2	Observe/interview a representative number of employees and check documentation to verify that: • PPE in use is appropriate for hazards of task(s). • PPE is worn properly. • Employees have been trained/informed of proper selection and use.
3.3	Interview/observe to verify that: • Defective/damaged PPE is removed from service. • Contaminated PPE is properly segregated into correctly labeled containers.


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APPENDIX B. PPE WORK AREA HAZARD ASSESSMENT FORM


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AUSTIN ENERGY®	PERSONAL PROTECTIVE EQUIPMENT Work Area Hazard Assessment Survey and Certification	Page 1 of 4 Survey Date: _____

PART "A" *(Please PRINT clearly and sign on Page 4, Part "C")*

Job Description: _____

_____

Job Title: _____ Dept: _____

Employee Name: _____

PART "B" *Instructions: Mark appropriate box for each hazard associated with the job you are assessing.*

I. HEAD

A. POTENTIAL HAZARD/INJURY	NO	YES	B. REQUIRED PPE
1. Struck by:			1. Struck by:
a. Falling object			a. Hard hat
b. Airborne object			b. Hard hat
c. Moving object			c. Hard hat
2. Hit against			2. Hard hat
3. Contact with electrical current:			3. Electrical:
a. Shock			a. Hard hat
b. Burn			b. Hard hat
4. Ambient temperature extremes			4. Ambient temperature extremes:
a. Cold			a. Hard hat with insulated winter FR liner
b. Heat			b. Hard hat with terrycloth sweatband
5. Other:			5. Other:
a. _____			a. _____
b. _____			b. _____
c. _____			c. _____

II. EYE AND FACE

A. POTENTIAL HAZARD/INJURY	NO	YES	B. REQUIRED PPE
1. Airborne:			1. Airborne:
a. Objects			a. Safety glasses w/side shields & face shield or goggles & face shield (see Section 703 of PPE Program)
b. Dust			b. Direct or indirect goggles
c. Fumes			c. Non-ventilated goggles
2. Flash:			2. Flash:
a. Welding			a. Welding hood w/ filter lenses
b. Electrical			b. Safety glasses w/side shields
c. 480V equip. and above			c. Flash Hood w/built-in face shield or Item d. below
d. Substation breakers/ network protectors			d. Race car driver hood, safety glasses w/side shields, and face shield or Item c. above
3. Chemical splash			3. Indirect vented or non-ventilated chemical goggles & face shield (see Section 703 of PPE Program)
4. Other:			4. Other:
a. _____			a. _____
b. _____			b. _____
c. _____			c. _____
d. _____			d. _____

AUSTIN ENERGY®	PERSONAL PROTECTIVE EQUIPMENT Work Area Hazard Assessment Survey and Certification	Page 2 of 4

PART "B" Continued

III. EARS

A. NOISE LEVEL	NO	YES	B. REQUIRED PPE
1. Ambient level 85 dBa or above			1. Ear plugs or muffs w/ appropriate NRR
2. Impact noise 140 dBa or above			2. Ear plugs or muffs w/ appropriate NRR
3. _____			3. _____

IV. RESPIRATORY SYSTEM (Ref. 29 CFR 1910.134 Respiratory Protection)

A. POTENTIAL HAZARD / INJURY	NO	YES	B. REQUIRED PPE
1. Oxygen Deficiency.....			1. SCBA or CSARS
2. Airborne Particles:			2. Airborne Particles:
a. Dusts			a. Nuisance Dust Mask
b. Fumes			b. Determined by MSDS (CHECK % OXYGEN)
c. Mists			c. Determined by MSDS (CHECK % OXYGEN)
3. Airborne Contaminants:			3. Airborne Contaminants
a. Gases (H2S, SO2, etc.)			a. Determined by MSDS (CHECK % OXYGEN)
b. Vapors (Solvents, Cleaners)			b. Determined by MSDS (CHECK % OXYGEN)
4. Combinations of Above.....			4. Protect at highest applicable level.
5. Ambient temperature Extremes:			5. Ambient temperature Extremes:
a. Cold			a. Cover mouth and nose (ENSURE OXYGEN)
b. Heat			b. SCBA or CSARS
6. Other			6. Other
a. _____			a. _____
b. _____			b. _____

V. HANDS / ARMS (Ref. 29 CFR 1910.138 Hand Protection)

A. POTENTIAL HAZARD / INJURY	NO	YES	B. REQUIRED PPE
1. Cuts / Abrasions / Punctures.....			1. Leather Gloves or Cut-resistant Gloves
2. Contact with Electrical Current:			2. Contact with Electrical Current:
a. 480 Volts or more			a. Class 2 Rubber Gloves
b. Under 480V (distribution).....			b. Class 1 Rubber Gloves
c. Under 480 V (non-dist.).....			c. Avoid contact
d. Close proximity high voltage			d. Nomex Jacket / Hood + Gloves
3. Chemical Contact:			3. Chemical Contact:
a. Irritant.....			a. Gloves / Coveralls per MSDS
b. Corrosive.....			b. Gloves / Coveralls per MSDS
c. Toxic.....			c. Gloves / Coveralls per MSDS
4. Hot/Cold Substances			4. Hot/Cold Substances:
a. Cold.....			a. Layered Gloves and Clothing
b. Heat.....			b. Gloves / Tools / FR Clothing
5. Biological Reactions:			5. Biological Reactions:
a. Plants (poison ivy, etc.).....			a. Gloves / Clothing / Barrier Creams
b. Insects (bites, stings).....			b. Gloves / Clothing / Repellants
6. Cumulative Trauma			6. Properly Designed Workstations / Armrest / Etc.
7. Other:			7. Other:
a. _____			a. _____
b. _____			b. _____
c. _____			c. _____

AUSTIN ENERGY	PERSONAL PROTECTIVE EQUIPMENT Work Area Hazard Assessment Survey and Certification	Page 3 of 4

PART "B" Continued

VI. TORSO

A. POTENTIAL HAZARD / INJURY	NO	YES	B. REQUIRED PPE
1. Cuts/abrasions/punctures			1. Proper clothing
2. Contact with electrical current			2. Contact with Electrical Current
a. Flash/fire			a. AE-approved long-sleeve shirt (rolled down) + optional 100% cotton or flame-resistant material T-shirt (+ AE-approved, fire-retardant raingear in inclement weather)
b. 480V equip. and above			b. Nomex jacket
3. Chemical contact:			3. Chemical contact
a. Irritant			a. Protective clothing per MSDS
b. Corrosive			b. Protective clothing per MSDS
c. Toxic			c. Protective clothing per MSDS
4. Hot/cold substances:			4. Hot/cold substances:
a. Cold			a. Layered clothing
b. Heat			b. AE-approved long-sleeve shirt (rolled down) + 100% cotton short-sleeve t-shirt
c. Welding			c. Welding jacket
5. Biological reactions:			5. Biological reactions:
a. Plants (poison ivy, etc.)			a. Clothing / barrier creams
b. Insects (stings/bites)			b. Clothing / repellants
6. Over-exertion (strains)			6. Proper body mechanics, tools & assistance, as needed
7. Cumulative trauma			7. Proper body mechanics / properly designed work area
8. Other:			8. Other:
a. _____			a. _____
b. _____			b. _____
c. _____			c. _____

VII. LEGS / FEET (Ref. 29 CFR 1910.136 Foot Protection)

A. POTENTIAL HAZARD / INJURY	NO	YES	B. REQUIRED PPE
1. Struck by:			1. Struck by:
a. Falling object			a. Safety toe footwear
b. Moving object			b. Safety toe footwear
c. Airborne object			c. Safety toe footwear / proper clothing (leggings, etc.)
2. Struck against			2. Safety toe footwear
3. Cuts / abrasions / punctures			3. Safety toe footwear w/puncture-resistant sole
4. Chemical Contact:			4. Chemical contact:
a. Irritant			a. Chemical-resistant footwear & clothing per MSDS
b. Corrosive			b. Chemical-resistant footwear & clothing per MSDS
c. Toxic			c. Chemical-resistant footwear & clothing per MSDS
5. Biological reactions:			5. Biological reactions:
a. Plants (poison ivy, etc.)			a. Clothing / barrier creams
b. Insects (stings / bites)			b. Clothing / repellants
6. Animal bites			6. Awareness / repellants / clothing
7. Cumulative trauma			7. Properly designed workstation / proper fit, etc.
8. Other:			8. Other:
a. _____			a. _____
b. _____			b. _____
c. _____			c. _____

AUSTIN ENERGY®	PERSONAL PROTECTIVE EQUIPMENT Work Area Hazard Assessment Survey and Certification	Page 4 of 4

PART "B" Continued

VIII. WHOLE BODY

A. POTENTIAL HAZARD / INJURY	NO	YES	B. REQUIRED PPE
1. Cuts / abrasions / punctures			1. Proper clothing
2. Contact with electrical current			2. Contact with electrical current
a. Flash / fire			a. AE-approved long sleeve shirt (rolled down)
b. Close proximity flash / fire			b. Nomex jacket / hood
3. Chemical contact:			3. Chemical contact
a. Irritant			a. Protective clothing per MSDS
b. Corrosive			b. Protective clothing per MSDS
c. Toxic			c. Protective clothing per MSDS
4. Hot/cold substances:			4. Hot/cold substances:
a. Cold			a. Layered clothing
b. Heat			b. AE-approved long sleeve shirt (rolled down)
c. Welding			c. Welding jacket
5. Biological reactions:			5. Biological reactions:
a. Plants (poison ivy, etc.)			a. Clothing / barrier creams
b. Insects (stings / bites)			b. Clothing / repellants
6. Over-exertion (strains)			6. Proper body mechanics, tools & assistance as needed
7. Cumulative trauma			7. Proper body mechanics / properly designed work area
8. Suffocation by engulfment:			8. Engulfment:
a. Liquid			a. Fall protection / personal flotation device
b. Granulated			b. Fall protection
9. Struck by: (vehicle, etc.)			9. Traffic vest / barricades / cones / etc.
10. Slip / trip / fall:			10. Slip / trip / fall
a. To same level			a. Anti-skid surfaces / shoes
b. To different level			b. Appropriate fall protection system
11. Other:			11. Other:
a.			a. _____
b.			b. _____

PART "C" COMMENTS

I, _____ certify that this Work Area Hazard Assessment survey was conducted on this day for the job identified on Page 1 part "A" under Job Description.

_____ Employee Signature and Date	_____ Supervisor Signature and Date

CITY OF AUSTIN

HOT WORK PROGRAM

April 2008

Approved By:

Signature signature on file Date 04/08
Garry Durante
Safety & Risk Management Manager

Signature signature on file Date 04/08
Roger Duncan
General Manager

NOTE: This document is formatted for double-sided printing. Blank pages have been inserted where necessary to facilitate correct pagination.

TABLE OF CONTENTS

100 INTRODUCTION

101 PROGRAM DESCRIPTION

The Hot Work Program has been established to provide safety guidelines for all work involving electric or gas welding, cutting, brazing, grinding, or similar flame or spark producing operations. The program includes procedures for hot work in designated and nondesignated areas.

The AE Hot Work Program is based on the following:

- Minimum requirements of OSHA's Welding, Cutting, and Brazing, (29 CFR. 1910.252) Standard.
- Minimum requirements of OSHA's Process Safety Management of Highly Hazardous Chemicals, (29 CFR 1910.119 k) Standard.
- NFPA 51B Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, 2001 Ed.

The Hot Work Program shall be used in conjunction with other applicable Austin Energy and City of Austin programs, including, but not limited to, the following:

- Confined Space Entry Program
- Respiratory Protection Program
- Personal Protective Equipment Program
- *Austin Energy Employee Safety and Risk Management Manua*l, latest edition.
- AE Hot Work Program Assessment
- *City of Austin's Risk Management Manual*, latest edition.

102 PURPOSE

The purpose of this program is (1) to provide safe work procedures for maintaining control over activities involving hot work and (2) to ensure that employees are aware of and use appropriate safeguards when performing hot work activities.

103 SCOPE

The Hot Work Program applies to AE employees who perform any of the following:

- Work involving electric or gas welding, cutting, brazing, grinding, or similar flame or spark producing operations
- Make decisions affecting the performance of welding, cutting, grinding, or brazing activities
- Make decisions related to the procurement and/or oversight of contractor or subcontractor work projects.

104 TERMS AND DEFINITIONS

Term	Definition
Affected Employee	An employee whose job requires him or her to perform hot work.
Authorized Employee (Fire Safety Supervisor)	A qualified person (supervisor or designee) designated by management to perform a *pre-work* inspection of areas affected by hot work. The authorized employee also establishes precautions for ensuring the safe performance of work.
Combustible Material	Any solid or liquid material having a flash point above 100 degrees F.
Firewatcher	An individual assigned to observe a specific area during the performance of hot work for the purpose of identifying or detecting any condition that could result in fire.
Hot Work	Work involving electric or gas welding, cutting, brazing, grinding, or similar flame- or spark-producing operations.
Hot Work Permit	A printed document that is used to authorize hot work activity for a specific job at a specific job site.
Qualified Employee	A person who successfully demonstrates skill and knowledge and is recognized by management to perform assigned duties.
Ignition Sources	Sparks, arcs, slag, and hot metal that result from hot work processes.
Flammable Material	Any solid or liquid material having a flash point below 100 degrees F.

200 DUTIES AND RESPONSIBILITIES

The...	shall...
AE Safety and Risk Management Section	Provide technical direction and support for AE locations with the implementation of this safety program. Develop, schedule, and deliver training to AE personnel for enabling implementation of this safety program. Schedule and conduct Hot Work Program Assessments in accordance with the AE Safety & Risk Management Hot Work Program. Maintain a current written program document by revising and re-issuing this written document, as necessary. Review, approve, and recommend implementation of this program.

The...	shall...
Division / Location Managers	Implement this program. Communicate expectations. Ensure that all affected employees are properly trained and qualified to implement this program. Designate locations within their assigned work facility as safe for performing hot work operations.
Authorized Employees (Fire Safety Supervisor) (Supervisors and Crew Leaders)	Attend designated training and maintain knowledge of the location's hot work program. Determine when a particular job or work practice may result in hot work activities. Determine the presence of combustible, flammable, or hazardous material in areas where hot work will be performed. Protect combustible, flammable, or hazardous materials from ignition by establishing sufficient levels of protection that are identified within this program. When applicable, issue Hot Work Permits and log information onto permit log sheet based upon a review of the work area and identification of potential hazards found within the area. Designate and assign fire watches, as necessary. Ensure that all affected employees are trained and qualified to perform hot work safely.
Firewatcher	Attend designated training and be knowledgeable of the Hot Work Program requirements and use of fire suppression equipment. Be familiar with all real and potential fire hazards that may be present in the area that is affected by the hot work. Be knowledgeable with the location's procedures for summoning help and sounding a fire alarm. When applicable, obtain a completed Hot Work Permit from the responsible supervisor (Fire Safety Supervisor). Maintain constant observation of the directly affected and adjacent areas around hot work to detect the presence of fire or the potential contact between ignition sources and fuel sources. Remain in the affected areas at all times while hot work is in progress and for 30 minutes following completion of the work. Sign and close both Hot Work Permit and Hot Work Permit log sheet.
Affected Employees	Attend designated training and maintain knowledge of the location's Hot Work Program requirements.

The…	shall…
Contractor / Vendor Sponsors	Ensure that contractors/vendors are informed of the requirements of this program.
	Ensure that contractors/vendors perform work in compliance with the requirements of this program.
	Ensure that contractors/vendors are trained to perform hot work activities. Require contractors to provide training documentation prior to the start of work.

300 FIRE PREVENTION

Hot work activities are responsible for a significant percentage of all industrial fires. The best way to ensure hot work safety is to perform all welding, cutting, brazing, grinding, or other hot work activities in a designated, safe location removed from potential fuel sources. However, because a removed location is not always practical, the implementation of fire prevention measures is required.

301 FIRE PRECAUTIONS

The most effective means for ensuring fire safety during periods of hot work is to control and eliminate the possibility of ignition sources coming into contact with potential fuel sources. An identified authorized employee (Fire Safety Supervisor) at each work location shall inspect areas affected by hot work to perform the following:

- Determine the presence of any potential fuel sources
- Designate any fire prevention precautions that are appropriate
- Designate a trained individual or individuals to perform fire watch duties.

To reduce the likelihood of ignition sources coming into contact with fuel sources, a clear distance of 35 feet should be maintained between hot work activities and any flammable or combustible materials. When it is not practical to maintain such clearance, shielding or protective covers shall be placed over the materials to prevent direct contact with ignition sources.

Hot work activities generate extremely high temperatures. For this reason, flammable and combustible materials located on or near walls directly adjacent to hot work shall be protected from high temperatures and potential contact with ignition sources.

Hot work might be performed in areas that contain floor openings or holes or grate or wall openings. A common cause of fire is the failure to maintain a high level of awareness in these areas during hot work. Therefore, the areas above, below, and on either side of any hole or opening shall be inspected to identify any potential fuel sources before and during hot work activities.

When the possibility exists for hot work ignition sources to enter any open drum, barrel, or pail, the container shall be covered to prevent fire. When practical, the container shall be kept closed and/or removed from the hot work area.

Fire extinguishers and/or other suitable fire extinguishing equipment shall be maintained in a state of constant readiness. Fire extinguishers shall be available for immediate use in all affected areas.

302 FIRE WATCH

Fire watch personnel shall be used whenever hot work is being performed in locations where the potential for more than a minor fire exists or whenever any of the following conditions exists:

- Combustible materials in building construction or contents are closer than 35 ft (11 m) to the point of operation.
- Combustible materials are more than 35 ft (11 m) away but are easily ignited by sparks.
- Wall or floor openings within a 35-ft (11-m) radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors.
- Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.

More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by the initial fire watch.

Personnel trained as firewatchers shall be positioned so that they can observe all areas, including above, below, and adjacent to potential ignition sources. Firewatchers shall sound an alarm in the event of a fire. They shall also attempt to extinguish the fire with the available fire extinguishing equipment.

Fire watches shall be maintained in all hot work affected areas for a period of 30 minutes following the conclusion of the work.

303 PROHIBITED ACTIVITIES

Hot work activities **shall not** be performed whenever any of the following conditions exist:

- Work area is not authorized by location management.
- Sprinkler systems are inoperable or impaired.
- Explosive atmospheres are present or a potential for an explosive atmosphere exists.

  NOTE: **Hot Tapping** or other cutting and welding on flammable gas or liquid transmission or distribution utility pipeline shall only be performed by a crew that is qualified to make hot taps.
- Areas near the storage of large quantities of exposed, readily ignitable materials such as baled paper, chemical products, or cloth (rag) storage.

400 HOT WORK AUTHORIZATION

401 AUTHORIZED EMPLOYEES

Management of each AE work location shall designate authorized employees to approve hot work activities and issue hot work permits. Designated employees shall either be crew supervisors or crew leaders.

The authorization and approval of hot work shall be made **only after** the following precautions have been implemented:

- A **pre-work** inspection of the work area and adjacent areas.
- Work is moved to a location free from combustibles.
  -or-
  If the work cannot be moved, combustibles are moved to a safe distance or the combustibles are properly shielded against ignition.
- Necessary measure for fire prevention.

402 HOT WORK PERMITS

The AE Hot Work Permit (Appendix A) is a card form that must be used to document the authorization of hot work activity for a specific job and/or job site. Before hot work operations begin in a non-designated location, the authorized employee shall complete a Hot Work Permit. Based on local conditions, the authorized employee shall determine the length of the period for which the hot work permit is valid.

Each permit shall be assigned a unique sequential number that shall be recorded on Hot Work Permit Log (Appendix B). To facilitate program review, the completed permits shall be kept on file for a period of one month and the Permit Log for a period of one year.

The Hot Work Permit is intended to provide workers with information pertaining to fire hazards that may be associated with the work that is being performed. Also, the permit is intended to ensure that adequate safeguards and precautions for preventing fire have been established and documented. Before a Hot Work Permit is issued, the authorized employee shall verify the following conditions:

- Hot work equipment to be used shall be in satisfactory operating condition and in good repair.
- Where combustible materials, such as paper clippings, wood shavings, or textile fibers, are on the floor, the floor shall be swept clean for a radius of 35 ft (11 m). Combustible floors (except wood on concrete) shall be kept wet, covered with damp sand, or protected by noncombustible or fire-retardant shields. Where floors have been wet down, personnel operating arc welding or cutting equipment shall be protected from possible shock.
- All combustibles shall be relocated at least 35 ft (11 m) horizontally from the work site. If relocation is impractical, combustibles shall be protected with fire-retardant covers or otherwise shielded with metal or fire-retardant guards or curtains. Edges of covers at the floor shall be tight to prevent sparks from going under them, including where several covers overlap when protecting a large pile.
- Openings or cracks in walls, floors, or ducts within 35 ft (11 m) of the site shall be tightly covered with fire-retardant or noncombustible material to prevent the passage of sparks to adjacent areas.
- Conveyor systems that might carry sparks to distant combustibles shall be shielded.
- If hot work is done near walls, partitions, ceilings, or roofs of combustible construction, fire-retardant shields or guards shall be provided to prevent ignition.
- If hot work is to be done on a wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side by relocating combustibles. If it is impractical to relocate combustibles, a fire watch on the opposite side from the work shall be provided.

- Hot work shall not be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation, or on walls or partitions of combustible sandwich-type panel construction.

- Hot work to be performed on pipes or other metal that is in contact with combustible walls, partitions, ceilings, roofs, or other combustibles shall not be undertaken if the work is close enough to cause ignition by conduction.

- Fully charged and operable fire extinguishers that are appropriate for the type of possible fire shall be available immediately at the work area. If existing hose lines are located within the hot work area, they shall be connected and ready for service, but are not required to be unrolled or charged.

- If hot work is done in close proximity to a sprinkler head, a wet rag shall be laid over the head and then removed at the conclusion of the welding or cutting operation. During hot work, special precautions shall be taken to avoid accidental operation of automatic fire detection or suppression systems (for example, special extinguishing systems or sprinklers).

- Nearby personnel shall be suitably protected against heat, sparks, slag, and other similar hazards.

403 DESIGNATED HOT WORK LOCATION

Each AE facility manager shall designate an area within the facility where hot work activities can be performed without fear of hot work ignition sources coming into contact with potential fuel sources. The area shall conform to the following guidelines:

- Area shall be located away from concentrations of flammable and combustible materials.

- Walls and floors shall be constructed of non-combustible materials.

- Welding booth walls shall be painted with a non-combustible finish. The reflectivity of the finish shall be low to prevent exposure to glare and ultraviolet light emitted from welding arcs.

- Fire extinguishing equipment shall be immediately available and accessible within the designated area.

- At least two employee exits from the area shall be established and maintained.

404 SPECIAL CONSIDERATIONS

The performance of hot work not only creates potential fire hazards but often results in other potential safety and health hazards. Therefore, workers exposed to confined spaces, surface coatings, and storage vessels and containers during hot work should remain aware of any additional existing or potential hazards.

405 CONFINED SPACES

Whenever work occurs that involves welding, cutting, brazing, or grinding inside a Confined Space, the following safety precautions shall be taken:

- Adequate ventilation shall be established and maintained inside the space (see Confined Space Entry Program).

- Gas cylinders shall remain on the outside of the space, and other equipment shall be secured to prevent unexpected movement.

- When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, the following actions shall be taken:

▸ To prevent accidental contact:	All electrodes shall be removed from the holders. Holders shall be carefully located so that accidental contact cannot occur The machine shall be disconnected from the power source.
▸ To eliminate the possibility of gas escaping through leaks or improperly closed valves:	The torch valves shall be securely closed. The gas supply to the torch shall be securely shut off at some point outside the confined area. Where practicable, the torch and hose shall be removed from the confined space.

- Where a welder must enter a confined space through a manhole or other small opening, rescue means shall be provided for quickly removing the welder in case of emergency. Any safety belts and lifelines used for this purpose shall be attached to the welder's body so that the welder can be removed without jamming a small opening.

- An attendant with a preplanned rescue procedure (see AE's Confined Space Entry Program) shall be stationed outside the confined space to observe the welder at all times. The attendant shall be capable of initiating rescue operations when necessary.

- Upon completion of work, welders shall provide some means of warning other workers of the presence of hot metal.

- The number of personnel inside the space during hot work activity shall be limited to only those who are actually needed to perform the work.

406 CONTAINERS

Drums, containers, or hollow structures that previously contained flammable or toxic materials shall be thoroughly cleaned by triple rinsing. When rinsing is not adequate, the container shall be further cleaned to remove any residual material. Any pipe, lines, or connections to a drum or container shall have the flange disconnected or blanked.

Before heat is applied to any drum, container, or hollow structure, a vent shall be established to permit the release of any resulting pressure buildup.

407 COATING

Before hot work occurs on any coated surface, a hazard analysis shall be conducted to determine the potential flammability and health hazards associated with the coating material. The hazard analysis is a review of the material's MSDS for toxicity and a burn test of a material scraping from the surface.

Any rapid burning material shall be considered highly flammable and shall require additional precautions. The surface material shall be stripped away from the area where the hot work is to be performed.

When performing hot work on potentially toxic surface materials, the following precautions shall be taken:

- Strip away the material a minimum distance of 4 inches from the heat application area.
- Use respiratory protective equipment.
- Use other personal protective equipment.
- Use local area ventilation.

Whenever it has been determined that coating material is flammable or toxic, a supervisor/crew leader representative should be consulted for assistance in establishing adequate levels of worker protection.

408 PERSONNEL PROTECTION

A. Protective Shielding

When hot work activity in an open area exposes other employees to arc or ultra-violent radiation, protective shields shall be placed around the work to prevent harmful light exposure to the employees. When it is not possible to completely shield the hot work activity, employees without suitable eye and face protection **shall be instructed not to observe** such work.

B. Personal Protective Equipment

Whenever AE personnel are exposed to eye and face hazards associated with hot work activity, they shall wear the appropriate protection for the work that is being performed. Protective equipment may include, but not be limited to, protective hoods, welding shields, hand shields, goggles, leather welding/work gloves, protective clothing, fall protection, and personal retrieval system.

C. Electric Shock

When arc welding is performed in actual or potential wet conditions, including environments with high humidity, protection against electrical shock shall be provided.

500 TRAINING

Employees whose work requires them to conduct Hot Work activities, perform Fire Watch duties, or oversee such work shall receive training that will provide them with the understanding, knowledge, and skills necessary for performing their work safely.

501 AFFECTED EMPLOYEE TRAINING

Employees who perform hot work (for example, welding, cutting, brazing, or grinding) shall receive training that will enable them to recognize potential hot work hazards and establish precautions to prevent fire or worker exposure to harmful elements. Topics taught in this training level include:

- Fire prevention
- Chemistry of fire
- Recognition of ignition sources
- Familiarization and general principles of fire extinguisher use
- Hot Work Permit system
- Location procedures for summoning help and sounding the alarm during a fire.

502 FIRE WATCH TRAINING

Workers assigned to perform fire watch duties shall attend Affected Employee Training and, in addition, receive training on the following topics **prior** to being assigned fire watch duty. The topics that are specific to this training shall be **repeated annually.**

- Training on the use of the fire extinguisher.
- Hazards involved with incipient stage fire fighting.

503 AUTHORIZED EMPLOYEE TRAINING

Prior to authorizing hot work activities to be performed in non-designated work areas, Authorized Employees (Supervisors and Crew Leaders) shall attend Affected Employee Training. In addition they shall be trained in the duties related to authorizing hot work activities.

504 TRAINING DOCUMENTATION

To certify that all training requirements associated with hot work activities have been met, training attendance shall be documented. Training documentation will include the name of each employee who attended the training, the attendance date, and the signature of the instructor.

600 SAFETY ASSESSMENT

The Hot Work Program will be assessed in accordance with the AE's Safety & Risk Management Hot Work Program Assessment. Safety assessment questions pertaining to hot work activities are contained in Appendix C. The questions have been designed to determine:

- Application of the Hot Work Program to a specific location.
- Program design to ensure compliance with the AE Hot Work Program.
- Verification of program implementation.

APPENDIX A. HOT WORK PERMIT

CUTTING/WELDING PERMIT

APPLIES ONLY TO AREA SPECIFIED BELOW

HOT WORK PERMIT NO. _____

DATE _____

BUILDING _____

FLOOR _____

NATURE OF JOB _____

The above location has been examined. The precautions checked on reverse of this tag have been taken to prevent fire. Permission is granted for work.

PERMIT EXPIRES _____
Date/Time

NAME OF WELDER _____

NAME OF FIRE WATCH _____

SIGNED _____
Fire Safety Supervisor

TIME STARTED _____

TIME FINISHED _____

FINAL CHECKUP _____

Work area and all adjacent areas to which sparks and heat might have spread (such as floors above and below and on opposite side of walls) were inspected for at least 30 minutes after work was completed and were found firesafe.

SIGNED _____

AFTER SIGNING, RETURN PERMIT TO PERSON WHO ISSUED IT.

NECESSARY PRECAUTIONS

Before signing this tag authorizing the job, the Supervisor should inspect the proposed work area and checkmark the following precautions taken.

	Yes	No
1. Examine hot work location:		
Sprinklers, where provided, are operable and will remain operable until work completed.	☐	☐
All flammable dusts, lint, vapors, or liquids are cleared from hot work area.	☐	☐
All unpurged tanks or equipment previously containing flammable material are removed.	☐	☐
The work will be confined to the area specified in this permit.	☐	☐
2. The following safeguards are provided:		
All floors and surroundings are swept clean and wet down if required.	☐	☐
Ample portable fire extinguishing equipment is provided and strategically located.	☐	☐
All unpurged tanks or equipment previously containing flammable material is removed.	☐	☐
3. For spark-producing equipment, the following has been done:		
All combustibles are located 35 feet from the hot work operation.	☐	☐
No combustible material is directly below work being performed.		
All non-moveable combustibles are protected with fireproof curtains, flameproof covers, etc.	☐	☐
A firewatch is appointed to watch for dangerous sparks in area above & below floors	☐	☐
4. Flame- or spark-producing equipment has been inspected and is in good repair.	☐	☐
5. Arrangements are made for area patrol, including above & below floors, during rest periods, & for at least one half-hour after work completion.	☐	☐
6. Are there any "no" answers above?*	☐	☐

*** IF YES, DO NOT ISSUE PERMIT. DO NOT PERFORM HOT WORK!**


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APPENDIX B. HOT WORK PERMIT LOG

HOT WORK PERMIT LOG

LOCATION: _____

PERMIT NUMBER	HOT WORK LOCATION	WELDER/ FIRE WATCH	FIRE SAFETY SUPERVISOR (or designee)	DATE	TIME	RELEASED BY	TIME/DATE CLEARED


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APPENDIX C. HOT WORK PROGRAM ASSESSMENT

The Hot Work Program Assessment applies to Austin Energy (AE) employees who perform hot work activities. The component also applies to employees making decisions that affect employees who perform hot work. The program's purpose is to ensure that adequate precautions have been taken to protect AE employees and facilities from the hazards typically associated with hot work activities.

The following questions have been designed to determine:

- Application of the Hot Work Program to a specific location.
- Program design to ensure compliance with the AE Hot Work Program.
- Verification of program implementation.

HOT WORK PROGRAM ASSESSMENT			
1.0	**Application Questions**		
1.1	Do hot work activities take place at this location?	☐ **Y**	☐ **N**
1.2	Has a designated area been identified at this location for performing hot work?	☐ **Y**	☐ **N**
1.3	Do contractors perform hot work at this location?	☐ **Y**	☐ **N**
1.4	Is hot work performed outside of designated areas at this location?	☐ **Y**	☐ **N**
1.5	Have any injuries or fires associated with hot work been reported at this location?	☐ **Y**	☐ **N**
1.6	Are any hot work jobs currently in progress or are any planned for the near future?	☐ **Y**	☐ **N**
1.7	Is hot work performed by employees who are assigned to this location at off-site work locations (such as, rights of way, substations, dams)?	☐ **Y**	☐ **N**
2.0	**Program Design**	☐ **Y**	☐ **N**
2.1	Does the location have site-specific procedures for issuing and controlling hot work permits?	☐ **Y**	☐ **N**
2.2	Have Authorized Personnel been designated to issue hot work permits?	☐ **Y**	☐ **N**
2.3	Are the following individuals trained in their roles and responsibilities for hot work:		
	Affected Employees	☐ **Y**	☐ **N**
	Firewatchers	☐ **Y**	☐ **N**
	Supervisors	☐ **Y**	☐ **N**
2.4	Does the location have a process for tracking the status of employee training and retraining?	☐ **Y**	☐ **N**
2.5	Does the location have site-specific procedures established for summoning help during a fire emergency?	☐ **Y**	☐ **N**
2.6	Is there a process established for informing contractors of their requirements regarding hot work activities?	☐ **Y**	☐ **N**
2.7	Is there a means for determining if contractor employees have been trained on the location's hot work procedures?	☐ **Y**	☐ **N**

HOT WORK PROGRAM ASSESSMENT			
3.0	**Program Verification**		
3.1	During a walk-through of the location:		
	Verify that a designated area has been established for performing hot work?	☐ **Y**	☐ **N**
	Verify that adequate means of egress from the area exists.	☐ **Y**	☐ **N**
	Verify the presence of fire extinguishing equipment.	☐ **Y**	☐ **N**
	Verify that the walls of the area are coated with a finish that offers low reflectivity.	☐ **Y**	☐ **N**
3.2	If possible, observe hot work being performed outside of designated areas and verify:		
	A hot work permit has been issued for the specific job and job site (as applicable to the AE work location).	☐ **Y**	☐ **N**
	The area has been made *fire safe*.	☐ **Y**	☐ **N**
	A firewatcher is present in all locations affected by the work.	☐ **Y**	☐ **N**
	Fire extinguishing equipment is readily available at the work site.	☐ **Y**	☐ **N**
	Adequate precautions exist to protect workers from the effects of by-products from hot work (such as, fumes, vapors, and glare).	☐ **Y**	☐ **N**
	Good housekeeping practices are being used within the area.	☐ **Y**	☐ **N**
3.3	If possible, observe hot work being performed inside of a permit-required confined space or enclosed space, and verify:		
	Adequate ventilation has been established for removing air contaminants from the space.	☐ **Y**	☐ **N**
	All fuel gas cylinders are maintained outside of the space.	☐ **Y**	☐ **N**
	Gas cylinders and other equipment are adequately secured to prevent unexpected movement.	☐ **Y**	☐ **N**
	Valve handles are attached to gas cylinder valve stems in order to ensure quick shut off of the gas cylinder.	☐ **Y**	☐ **N**
	Electrodes have been removed and safely stored away from their holders, when work is not in progress.	☐ **Y**	☐ **N**
	Warning signs have been posted to warn workers that the possibility for contact with hot metal exists.	☐ **Y**	☐ **N**
	Guards are properly installed on all grinders.	☐ **Y**	☐ **N**
	All personnel inside the space are directly involved with the hot work.	☐ **Y**	☐ **N**
	The confined space permit authorizes hot work to be performed within the space.	☐ **Y**	☐ **N**
3.4	If hot work is being performed by contractors/vendors, verify:		
	They have provided the AE sponsor with documentation of their hot work and fire watch training.	☐ **Y**	☐ **N**
	They know how to report a fire and sound the fire alarm.	☐ **Y**	☐ **N**