

4 June 02

1. **Description of Workplace:** All natural gas/fuel oil fired boiler fireboxes, steam and mud drums on Base. Actual physical access would be most common in the water tube boilers. Access to the waterside of the boilers would be through a manhole which would measure an opening of approximately 12"x16" into the steam drum. The steam drum is an area of the approx. diameter of 36" that runs the entire length of the boiler. Access to the firebox of the boilers would be through a bricked opening of approximately 12"x16" or removal of the burner assembly. Firebox's in the water tube boilers are a bricked space compartment that are approximately 8'x10'x length of the boiler. See Attachment 1 for locations. .
2. **Tasks/Operations to be performed:** Processes include cleaning, retubing boiler, replacing gaskets, replacing refractories and replacing boiler internals. The firetube boilers are cleaned using a vacuum with a brush auger to clean the tubes in the boiler.
3. **Chemicals used:** None
4. **Technical Data Required:** Boiler Manufacturer manuals, AFOSHSTD 91-25, AFOSHSTD 91-10
5. **Prevention of Unauthorized Entry :** All confined spaces are clearly marked and warning signs are posted. Prior to entering any confined space, proper tests and an AF form 1024 will be accomplished and area will be cordoned off.
6. **Potential Hazards :**
  - 6.1 **Potential Hazard Description :** Potential hazardous atmosphere. The water that is used to generate steam contains chemicals, such as, Sodium Hydrogen Sulfite, Sodium Hydroxide and Cyclohexylamine. Steam produces an excessive heat hazard and limited entry. Burns from hot surfaces and/or steam (hot water) are likely if care is not taken when working in and around boilers.
  - 6.2 **Control of Hazards :** Shut down boiler 72 hours prior to cleaning. Firebox and drum entry will only be permissible when acceptable entry conditions in paragraphs 7.1 and 7.2. are complied with, the firebox has been cooled to boiler room ambient temperature, there has been ample ventilation and testing procedures have been accomplished.
    - 6.2.1. **Entry Permit :** Required.
      - 6.2.1.1 **Permit:** Confined Space Entry Permit AF Form 1024.

6.2.1.2. **Permit Requirements:** Permit will not be issued until confined space meets requirements and acceptable entry conditions specified in paragraph 7.1 and 7.2.

6.2.2. **Confined Space Reclassification:** NONE

## 7. **Entry Procedures**

7.1. **Confined Space Isolation Methods/Lockout Tagout:** Turn off electrical circuit breaker, close and lockout/tagout door to breaker panel. Turn off electrical disconnect switch, Lockout, tagout disconnect. Close and lockout tagout fuel, steam and feed water valves.

7.2 **Acceptable Entry Conditions:** Lockout Tagout requirements listed in paragraph 7.1 must be complied with. Boiler must be turned off 72 hours in advance, and cooled down to near ambient temperature. Fire Department Emergency Rescue Service must be available and must be confirmed. The confined space will be tested and monitored with the MSA Passport. Oxygen levels will be tested first, which must be between 19.5% and 23.5%. It will then be tested for the following items. Readings must be within the following limits: Flammability <10% LEL, Hydrogen Sulfide <10 PPM.

## 8. **Authorization**

8.1. **Confined Space Entry Team :** Will consist of trained and authorized personnel from the 75 CES/CEOH

8.2. **Confined Space Entry Team Responsibility:** A typical entry team will consist of at least four personal: Entry Supervisor, Attendant, Entrant, and Spotter/Runner.

8.2.1. **Entry Supervisor:** The entry supervisor insures all lockout tagout and acceptable entry conditions listed in paragraph 7.1. and 7.2. are complied with. Authorizes the confined space entry permit, makes sure the entry permit is complete, dated, and signed prior to the entry and cancels the permit if conditions are no longer acceptable. Responsible for the isolation of the area, the assigning of tasks, and the briefing of the personnel doing the tasks. Entry Supervisor will act in accordance with all other duties outlined in AFOSH Std 91-25, par 2.13.

8.2.2. **Attendant:** Is responsible for maintaining an accurate count of entrants (who and number) in the permit space and keeping track of the entrant(s) and handing any needed equipment in or out of the boiler. He/she is to remain outside, on the upwind side of the entrance, in verbal contact with the entrant. Has authority to order entrants to exit the confined space at the first indication of a non-permitted condition, an unexpected hazard, indication of a toxic reaction (e.g., unusual conduct by the entrants), or if a situation occurs outside the space that could pose a hazard to the entrant(s). Keep unauthorized persons from entering the permit space. Know the procedure and have the means to summon immediate emergency assistance if needed. Remain at the attendant's post and not leave for any reason (except self-preservation) unless replaced by an equally qualified individual. Order the entrants to exit the space if the attendant must leave and there is no

replacement. Attendant must not attempt rescue-involving entry. Make rescue efforts by means of the lifeline until assistance arrives.

- 8.2.3. **Entrant:** Must review the permit before entry, complying with entry procedures, wear designated PPE (eye and face protection, hearing protection, and steel toe boots), full body harness and retrieval line, notifies the entry supervisor of illness and when medication is being taken, alerts the attendant to any changes or conditions in the confined space and responds immediately to the attendants evacuation orders
- 8.2.4. **Spotter/Runner:** Responds to the attendant's request to notify. Fire Department Emergency Rescue Service. Assist in Non-entry rescue. All utility crews have communication by cellular phone to call emergency services. **Remember cell phone 911 calls go off base. For base rescue services call 777-3021.**
9. **Training:** All personnel authorized to enter these confined space must be trained on confined space entry, site specific confined space training, cardiopulmonary resuscitation, respirator wear, use of PPE, retrieval/rescue equipment and atmospheric monitoring equipment. All training shall be documented on an **AF Form 55, Employee Safety and Health Record**. Training records will be available for review by the CSPT during annual program evaluations or spot checks.
10. **Entry Equipment:** Leather gloves, coveralls, eye protection and hearing protection. Also a body harness and extraction tri-pod will be available.
11. **Testing:** CEOH will test the boiler with equipment having the capability to read LEL and oxygen levels, and Hydrogen Sulfide. Testing is completed daily during a project by the entry supervisor. Before an employee enters confined space, internal atmosphere shall be tested with the calibrated direct reading instrument for the following conditions: Oxygen levels will be tested first, which must be between 19.5% and 23.5%. It will then be tested for the following items. Readings must be within the following limits: Flammability <10% LEL, Hydrogen Sulfide <10 PPM.
12. **Communication and Observation:** The attendant will communicate verbally and maintain visual contact with the entrant. Phones are available in each facility, and a cellular phone will be on site also, to call emergency services. **Remember cell phone 911 calls go off base. For base rescue services call 777-3021.**
13. **Rescue:** The attendant will alert the runner to notify the Fire Department Emergency Rescue Service. The attendant, runner and any other personnel will assist in the extraction of the entrant using the rescue tripod. When the entrant is removed from the confined space the attendant will perform first aid and CPR if required, until the emergency services arrive and will then turn over rescue to base rescue service.
14. **Contractor Interface:** If a contractor is to enter a confined space listed under this MEP they must use their own equipment and permit. A copy of this master plan is given to contract management, who is responsible to inform the contractor of OSHA, AFOSH Standards, and local

OI's. If the organization arranges to have a contractor perform work that involves a permit-required space entry, IAW 91-25 Ch 7 the contracting organization shall: Notify the contractor that work will be performed in a permit-required confined space and ensure the information is included in the statement of work (SOW) or equivalent contracting tool. Review emergency rescue responsibilities to determine whether the contractor supplies rescue team or if the installation fire department is expected to supply a rescue function. Ensure the fire chief coordinates on the contract and either approve or disapproves the use of the rescue team if supplied by the installation fire department. Brief the contractor on the contents of the space and known hazards that make the space permit-required. Brief the contractor on precautions and procedures that have been implemented by the organization to protect Air Force workers.

15. **Permit Routing and Control:** Permit will be kept on file in the 75 CES/CEOH shop for a period of one year after completion of work.

16. **Amendment to the MEP:** The MEP must be reviewed at least once a year. Changes to the to the MEP other than spelling and grammar must be coordinated with the entry supervisor, organizational safety office, Bio-environmental Engineering /SGPB, Fire Department /CEF and Base Safety Office /SEG. Amendments to the MEP will be brought to attention of the confined space entry team.

17. **Coordination:**

_____	_____
75 CES/CEOH (Forman)	Date
_____	_____
75 CEG/CEMS Ground Safety Manager	Date
_____	_____
OO-ALC/SEG Ground Safety Manager	Date
_____	_____
75 AMDS/SGPB Bio-environmental	Date
_____	_____
75 CES /CEF Fire Department	Date

**ATTACHMENTS**

1. Confined Space Boiler location Listing (See paragraph 1)
2. Confined Space Chemical Listing (See paragraph 3)
3. Confined Space Entry Authorization List



**CONFINED SPACE MASTER ENTRY PLAN  
CE-003  
ATTACHMENT 1**

**CONFINED SPACE LISTING: Confined Spaces Boilers**

<b>Bldg./Location</b>	<b>Type/Equip.</b>	<b>Hazard Area</b>
<b>Boiler Plant 260</b>		
260	#2 Boiler	Firebox/Steam Drum
260	#3 Boiler	Firebox/Steam Drum
260	#4 Boiler	Firebox/Steam Drum
260	#5 Boiler	Firebox/Steam Drum
260	#6 Boiler	Firebox/Steam Drum
260	#7 Boiler	Firebox/Steam Drum
260	#8 Boiler	Firebox/Steam Drum
260	#9 Boiler	Firebox/Steam Drum
<b>Boiler Plant 825</b>		
825	#1 Boiler	Firebox/Steam Drum
825	#2 Boiler	Firebox/Steam Drum
825	#3 Boiler	Firebox/Steam Drum
<b>Boiler Plant 1286</b>		
1286	#1 Boiler	Firebox/Steam Drum
1286	#2 Boiler	Firebox/Steam Drum
1286	#3 Boiler	Firebox/Steam Drum
<b>Boiler Plant 1590</b>		
1590	#1 Boiler	Firebox/Steam Drum
1590	#2 Boiler	Firebox/Steam Drum
1590	#3 Boiler	Firebox/Steam Drum
1590	#4 Boiler	Firebox/Steam Drum
<b>Boiler Plant 1624</b>		
1624	#1 Boiler	Firebox
1624	#2 Boiler	Firebox
<b>Boiler Plant 1703</b>		
1703	#1 Boiler	Firebox
1703	#2 Boiler	Firebox
1703	#3 Boiler	Firebox
<b>Boiler Plant 1904</b>		
1904	#1 Boiler	Firebox

1904	#2 Boiler	Firebox
1904	#3 Boiler	Firebox

**Boiler Plant 2025**

2025	#1 Boiler	Firebox
2025	#2 Boiler	Firebox
2025	#3 Boiler	Firebox
2025	#4 Boiler	Firebox

**Boiler Plant 2104**

2104	#1 Boiler	Firebox
2104	#2 Boiler	Firebox

**Boiler Plant 2203**

2203	#1 Boiler	Firebox
2203	#2 Boiler	Firebox

**Boiler Plant 519**

519	#1 Boiler	Firebox
519	#2 Boiler	Firebox
519	#3 Boiler	Firebox
519	#4 Boiler	Firebox
519	#5 Boiler	Firebox

**Boiler Plant 238**

238	#1 Boiler	Firebox
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**CONFINED SPACE MASTER ENTRY PLAN  
CE-003  
ATTACHMENT 2**

**CONFINED SPACE CHEMICAL LISTING**

The following is a list of chemicals authorized for use during the confined space entry.

<u>Chemical</u>	<u>Quantities Authorized for Use</u>	<u>Expected Exposure Level</u>
None	N/A	N/A

**CONFINED SPACE MASTER ENTRY PLAN  
CE-003  
ATTACHMENT 3**

**CONFINED SPACE ENTRY AUTHORIZATION**

The following personnel assigned to 75 CES/CEOH (Heat Plant) are authorized to approve and sign confined space entry

<b>NAME</b>	<b>OFFICE SYMBOL</b>	<b>Primary/Alternate</b>
Daniel Bybee	75 CES/CEOH	Primary
Steven Phillips	75 CES/CEOH	Alternate
William Whitney	75 CES/CEOH	Alternate
Randy Thompsen	75 CES/CEOH	Alternate
Boyd Wright	75 CES/CEOH	Alternate
Authur Parr	75 CES/CEOH	Alternate