Session No. 662

Auditing Compliance with Work Permit Procedures

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OSHA requires most companies to implement procedures for controlling hazardous energy (Lockout/Tagout), Confined Space Entry and Hot Work. The OSHA Permit Required Confined Space Entry Standard 1910.146 requires an annual review of the program using cancelled permits. The OSHA General Industry Standard 1910.147 requires a periodic inspection of the program at least annually. In addition to the OSHA required permit programs many companies require permits for work involving Trenching and Excavation, Line Opening and Critical Crane Lifts. They also require periodic evaluations of these procedures.

Work Permit Programs

Before implementing a Work Permit Audit Process one needs to understand the value and importance of the permit process. Work permits are the cornerstone of an effective safety program. If the work permit program is not functioning as intended there could be serious, if not fatal, consequences. Permits provide a means of controlling potentially hazardous work and serve as a means of communication between the equipment "owners" and personnel performing the work. Work permits also serve as a preplanning tool and as a safety checklist.

Duties and Responsibilities

Equipment owners (permit issuers) are typically responsible for:

- Reviewing the scope of work
- Preparing and isolating equipment
- Setting the conditions under which the work must be performed
- Issuing the permits
- Monitoring jobsite and area conditions for permit compliance
- Auditing work practices relative to established permit requirements
- Taking action to correct deviations from permit requirements
- Canceling and closing out permits

Personnel performing the work (permit recipients) are typically responsible for:

- Meeting with equipment owners to review the scope of work
- Clearly understanding the job and safety requirements
- Verifying equipment preparation and isolation
- Complying with permit conditions
- Following safe work practices
- Monitoring jobsite and area conditions for permit compliance
- Taking action to correct deviations from permit requirements

Accident Causes

History has shown that accidents are often the result of:

- Failure to use permit procedures
- Failure to follow permit procedures
- Permit recipient's failure to verify equipment isolation
- Poor or sloppy work practices
- Lax attitudes
- Blanket permits for multiple tasks in a given area
- Failure of permit issuer to monitor area / job
- Failure of facility / owner to audit its own program
- Failure of owners and contractors to audit each other

Critical Times and Jobs

Certain times or types of work also create challenges to the work permit system. These include:

- Turnarounds or outages
- Unplanned shutdowns
- Emergencies
- Work on inter-connecting equipment
- Demolition and renovation
- Tie-ins
- Multiple crews / contractors
- Line / vessel entry
- Hot work
- Resumption of interrupted work
- Shift Changes
- Blind insertion and removal
- When work is performed by operations / area personnel

Key Elements of an Effective Work Permit Audit

For work permit programs such as these to be effective there must be a rigid audit process in place. The audit process should:

- Incorporate a weighted scoring system with the more serious items carrying a much heavier weight than less critical but "significant" type items.
- Incorporate a mechanism for identifying those items directly under control of the "issuing" department as well as those under the control of the "receiving or accepting" department.
- Provide a system that can be used to audit a single operating unit as well as a group of units or the entire facility or job site.
- Provide a means of readily identifying problem areas or potential problem areas.
- Eliminate to the extent possible the "subjectiveness" which often taints or discolors an audit of this nature.

Guidelines for Developing the Audit Process

- Review work permit procedures to identify observable and measurable audit criteria. Also review work permit training programs and the associated material. Keep in mind procedures may be well written but poorly understood and executed due to the quality and content of the training.

- Draft audit criteria questions relative to specific activities or tasks within the procedure. Each audit question must address a specific permit requirement and be observable and measurable. A list of sample questions is shown as Attachment 1.

- Audit criteria must consider both the planning and execution phases of the job. This means one must look at the specific requirements of a permit (were the hazards identified and controls specified) and were the requirements followed. For example, was the correct PPE specified and was it being worn as intended?)

- Critical elements that can adversely impact people, equipment or the environment must be weighted more heavily than clerical permit requirements. There are two ways to weight an audit question. One is to give a numerical value to each question with the more critical questions having a higher value than those dealing with clerical issues. Another way is to simply categorize questions as to critical and clerical. Critical questions might be bolded. Bolded questions are sometimes considered to be “can’t miss” questions. If a bolded question is missed the permit in question fails the audit. If a certain number of clerical questions are missed on a given permit, the permit in question fails the audit. Examples to two audit protocols are shown as Attachments 2 and 3.

- Audit criteria should be put in a template or form. Audit forms should be quick and easy to use. To the extent possible, the audit form should closely follow the layout and structure of the permit(s). This will be of great benefit to the auditors and make the audit process go more smoothly. The audit form must have adequate space for auditor comments. Anytime a deficiency is identified a comment as to the specifics should be noted. The goal is to identify

the root cause(s) of the problem(s) so corrective action can be taken. For example, was the deficiency the result of inadequate training, a confusing procedure or a motivational issue.

- Audit criteria must be defined to assure consistency among auditors. Auditors should be provided with a detailed explanation of each audit question. Attachment 2 provides a good illustration this concept.

- Prior to implementing the audit process training should be provided to permit issuers, permit recipients and auditors. Permit issuers and recipients will need awareness level training. Permit auditors will need performance level training.

- Pilot the audit process for a short period of time to identify and work out any technical and or logistical problems. Initially have auditors work in pairs to build understanding and consistency.

- Track, trend and publish the audit results on a regular basis. Conduct meetings with stakeholders and or focus groups to clarify potential problem areas and develop solutions. Identify pockets of excellence and have area personnel share what they are doing to achieve a high level of success.

- Develop an audit validation process. Once the process is up and running periodically conduct validation audits to check the quality and consistency of the published audit findings. This is critically important if any incentives are tied to improved performance.

- Review and revise permit policies and procedures as well as the audit protocol as necessary.

Attachment 1

Some Basic Questions to Consider

1. Was the scope of work correctly described?

2. Was / were the correct permit(s) specified?

3. Were hazardous materials in equipment identified?

4. Can workers describe hazards of materials to which they may be exposed?

5. Were all the correct isolation points specified?

6. Were all operations locks in place?

7. Were all operations tags correctly completed and hung?

8. Were blinds installed in the correct location(s)?

9. Were blinds correctly listed and tagged?
10. Were blinds of the correct materials of construction and pressure rating?
11. Were exposed workers' locks in place?
12. Were exposed workers' locks identified as to ownership?
13. Can exposed workers locate all isolation points specified on the lockout – tag out procedure and / or blind list?
14. Was the correct PPE specified?
15. Was the correct PPE worn?
16. Were the correct fire precautions specified?
17. Were the correct fire precautions implemented?
18. Were area combustibles covered or protected?
19. Were area sewers and drains covered and water sealed?
20. Was the correct fire extinguisher(s) specified?
21. Was the correct fire extinguisher readily available?
22. Was barricading required?
23. Was barricading in place, of the appropriate color & properly tagged?
24. Was a fire watch specified?
25. Was a fire watch on duty?
26. Could the fire watch accurately describe his / her duties?
27. Could the fire watch describe site emergency reporting procedures?
28. Were the appropriate gas tests specified?
29. Were the appropriate gas tests performed and results entered on the permit?
30. Did the gas monitor pass a functional field or bump test at the time of the audit?
31. Was the gas monitor calibrated in accordance with company policy?
32. Was the frequency of follow up gas tests specified?

33. Were follow-up or continuous monitoring requirements met and documented?

34. Were the correct types of tools specified? (non-sparking, pneumatic, etc.)

35. Were the correct types of tools being used?

36. Was the correct type of lighting and or portable electric tools specified? (Explosion proof, safety low voltage, GFCI protected, double insulated, Assured Equipment Ground)

37. Was the correct type of ventilation equipment specified? (dilution or local exhaust, electric or pneumatic, grounded and bonded))

38. Was the specified ventilation equipment installed correctly?

39. Were the appropriate authorization or approval signatures in place?

40. Were the appropriate acceptance signatures listed on the permits?

41. Was the permit correctly closed out by maintenance?

42. Was the permit correctly closed out by issuing department ?

43. Could confined space entrants describe hazards of space?

44. Were all confined space entrants' names listed on the entry permit?

45. Was the confined space attendants' name listed on the entry permit?

46. Were confined space entrants wearing the required retrieval equipment?

47. Could the attendant correctly describe or demonstrate how to perform an external rescue using the equipment provided?

48. Could the confined space attendant describe how to call for help?

49. Was there a vessel specific rescue plan for complex or IDLH entries?

50. Could rescue personnel describe or demonstrate vessel specific rescue plans for complex or IDLH entries?

Attachment 2 - Work Permit Audit Guidelines

Premise

1. Provide a uniform method for objectively evaluating compliance with the Work Permit Procedures.

2. Incorporate a weighted scoring system with the more critical items carrying a much heavier weight than less critical "clerical" type items.

3. Incorporate a mechanism for identifying those items directly under control of the "issuing" department as well as those under the control of the "receiving or accepting" department.

4. Provide a system that can be used to audit a single operating unit as well as a group of units or the entire plant.

5. Provide a means of readily identifying problem areas or potential problem areas.

6. Take away, as much as possible, the "subjectiveness" which often taints or discolors an audit of this nature.

Basic Concept

A Work Permit Audit Form (copy attached) has been developed to guide the auditor(s) through the audit and provide a quick means for documenting his/their findings. This is a two-page form. Page 1 follows the same format as the Work Permits. Page 2 is used for evaluating the maintenance, use and condition of the unit or area's gas testing equipment. By combining the scores of the two pages the auditor(s) can obtain a numerical value on which to base the unit or area's overall performance with respect to the Work Permit Procedures.

Page 1 of the audit form follows the same format as the work permit. A base numerical value has been assigned to each segment of the permit. When the auditor is evaluating a specific item on a permit, it is either correct and as it should be or it is incorrect. If it is correct, the auditor gives the full credit or value assigned. If it is not correct the auditor subtracts the specified value. As an example look at Section 7D - Lockout Procedures. If the correct lockout procedure is followed, the auditor would give the full 10 points. If, however, the operation's personnel issuing the permit failed to put an accompanying tag with the lock, 1 point would be subtracted, and so on.

When conducting the audit, the auditor or team should review a random number of active permits within an area. It is recommended that at least 8 permits be reviewed in order to get a representative sampling. When a permit is selected for review, its number should be recorded in the appropriate space on the top of the form. Each aspect of the permit should be reviewed and verified in the field. Appropriate scores should be entered on the form for each category. If an item does not apply, simply give full credit for that segment. At the end of the audit, each column is added up and the total entered at the bottom of the page. The best possible score for a single permit is 115 points. The total scores for each permit are added together and then averaged by the number of permits audited. This gives an average numerical value for the permits. This number is added to the two numbers on Page 2 of the form, which gives information relating to the condition of the unit or area's gas testing equipment.

During the course of the audit, the unit or area's use and maintenance of the gas testing equipment should be evaluated. Page 2 of the audit form is used to document this segment of the audit. A check should be made to see that each MSA Solaris has been checked with calibration gas by the user within the past week and that this check has been recorded in a logbook. Likewise, each MSA Solaris should have a current inspection tag (no older than 30 days) from the Process Analyzer Group (PAG) lab noting the date of the last maintenance/calibration check. The auditor

should perform a functional check on each MSA Solaris unit to verify that it is in proper operating condition. A similar check should be made of the Drager pumps, performing a 30 second leak test.

Once the permits have been audited and gas testing equipment has been checked, compute the overall permit audit score. This is done on page 2 of the form and involves adding three numbers:

1. The average numerical value for the permit audits.
2. The average numerical value for the MSA Solaris.
3. The average numerical value for the Drager equipment.

The sum of these three numbers gives you the overall "audit score".

Sample Form

Work Permit Audit Unit/Area _____ Date _____ Performed By ____ Reviewed With ____	**Max. Points Avail.**	**W.P.#**	**W.P.#**	**W.P.#**	**W.P.#**	**W.P.#**	**W.P.#**	**W.P.#**	**W.P.#**	**Totals**
SECTION 1 – JOB DESCRIPTION (20 PTS.)										
A. Proper permit for job	10									
B. Work adequately described	5									
C. Entry non-entry hot cold noted	3									
D. Field copy posted in work area	2									
SECTION 2 – GAS TEST (20 POINTS)										
A. Properly specified	10									
B. Actually performed	5									
C. Performed on a timely basis	3									
D. Properly documented	2									
SECTION 3 – SPECIAL INSTRUCTIONS (3 PTS.)										
A. Any required										
B. Properly specified	2									
C. Being followed	1									
SECTION 4– HAZARDOUS MATERIALS (4 PTS.)										
A. Any present	2									

B. Properly addressed	2									
SECTION 5 – SPECIAL PROTECTION (4 PTS.)										
A. Any required										
B. Properly specified	2									
C. Properly used	2									
SECTION 6 – FIRE PROTECTION (10 PTS.)										
A. Any required										
B. Properly specified	5									
C. Actually at work site	5									
SEC. 7–COND. OF AREA & EQUIP. (40 PTS.)										
A. Isolation required (10 Points)										
1. Proper method selected	5									
2. Proper method utilized	5									
B. Free of combustibles (10 Points)										
1. Required and specified	5									
2. Performed	5									
C. Manholes/Sewers, etc. covered (5 Points)										
1. Applicable										
2. Specified	2.5									
3. Performed	2.5									
D. Lockout Procedures (10 Points)										
1. Applicable										
2. Locked (3) Tagged (1) Logged (1) Oper.	5									
3. Locked (3) Tagged (1) Logged (1) Maint.	5									
E. Other items required (5 Points)										
1. Specified	3									
2. Carried out	2									
SECTION 8 – APPROVAL (8 PTS.)										
A. Signed & dated	2									

issuer										
B. Signed & dated accepter	2									
C. Endorsed by issuer	2									
D. Endorsed by accepter	2									
SECTION 9 – JOB COMPLETION (6 PTS.)										
A. Sign off by workmen	2									
B. Sign off by operations	2									
C. Locks removed	2									
TOTALS: TOTAL POINTS AVAILABLE - 115	115									

SCORE: TOTAL POINTS _____ ÷ # of permits audited _____ = _____

Work Permit Audit Unit/Area _____ Date _____ Time _____ Performed By _____ Reviewed With _____	**Max. Points Avail.**					**Totals**
1. MSA 260 (6 POINTS)	**2**					
A. Current weekly calibration check logged	2					
B. Current PAG calibration / service tag	2					
C. Passed functional check	2					
TOTAL MSA 260 INFORMATION	6					
Total MSA Points Accumulated _____ ÷ # MSA Units Checked _____ = _____						
2. DRAGER PUMP (4 POINTS)						
A. Available	2					
B. Passed 30 second leak test	2					
TOTAL DRAGER PUMP INFORMATION	4					
Total Drager Points Accumulated _____ ÷ # Drager Units Checked _____ = _____						

Overall "Audit Score" = Avg. Permit Score + Avg. MSA 260 Score + Avg. Drager Score

Max. Audit Score: 115 + 6 + 4 = 125

Attachment 3 - Sample Work Permit Audit Guidelines

Premise

1. Provide a uniform method for objectively evaluating compliance with the Work Permit Procedures.

2. Incorporate a weighted scoring system with the more serious items carrying a much heavier weight than less critical but "significant" type items.

3. Incorporate a mechanism for identifying those items directly under control of the "issuing" department as well as those under the control of the "receiving or accepting" department.

4. Provide a system that can be used to audit a single operating unit as well as a group of units or the entire plant.

5. Provide a means of readily identifying problem areas or potential problem areas.

6. Take away, as much as possible, the "subjectiveness" which often taints or discolors an audit of this nature.

Basic Concept

A Work Permit Audit Form (copy attached) has been developed to guide the auditor(s) through the audit and provide a quick means for documenting findings. This form has four (4) sections. Section 1 addresses key elements of our Work Permit. Section 2 involves Lockout – Tag Out and Equipment Isolation. Section 3 addresses key elements of our Hot Work Permit and Section 4 addresses key components of our Confined Space Entry Permit.

There are two (2) types of questions on the audit form. The questions shown in bold print are deemed to be “serious” in nature. Failure to adequately address these issues could result in personal injury, equipment or property damage or an environmental release. Non-compliance or partial compliance to these “serious” questions (items in bold) will result in a “fail” status for the particular work permit being reviewed. The un-bolded audit questions are considered to be “significant” to achieving world-class performance, but non-conformance would not necessarily result in personal injury, property damage or an environmental incident. Non-compliance or partial compliance to 4 or more “significant” questions (non-bold items) will result in a “fail” status for the particular work permit being reviewed.

Table 1
INDIVIDUAL WORK PERMIT PASS/FAIL CRITERIA

	Non-Compliance Type	Number of Non-Compliances	Category Pass/Fail	Overall Score
Work Permit 1	Serious Question	0	Pass	Pass
	Significant	0	Pass	
Work Permit 2	Serious Question	1 or more	Fail	Fail
	Significant	0	Pass	
Work Permit 3	Serious Question	0	Pass	Pass
	Significant	1 - 3	Pass	
Work Permit 4	Serious Question	0	Pass	Fail
	Significant	4 or more	Fail	

When conducting the audit, the auditor or team should review a random number of active permits within an area. It is recommended that at least eight (8) permits be reviewed each process area in order to get a representative sampling of the process area's work permitting process. A audit target of 100 work permit reviews per month has been established. When a permit is selected for review, its number should be recorded in the appropriate space on the top of the form. Each aspect of the permit should be reviewed and verified in the field. If other permits are associated with the work permit such as Lockout / Tagout, Hot Work or Confined Space Entry, these permits should also be audited to give a complete picture of the hazards and control. Appropriate answers should be entered on the form for each category. If an item does not apply, note N/A in the appropriate space(s).

During the course of the audit, the unit or area's use and maintenance of gas testing equipment should be evaluated. A check should be made to see that each instrument used to issue a permit has been checked with calibration gas by the user before use that day and this check has been recorded in a logbook. Likewise, each instrument should have a current inspection tag (no older than 30 days) from the Instrument Department noting the date of the last maintenance/calibration check. The auditor should perform a functional check on each instrument to verify that it is in proper operating condition.

Definitions and Explanations

Work Permit

1. Was the scope of work correctly described? *The scope of work should be sufficiently defined to identify the potential hazards, i.e., welding overhead (in a pipe rack or on an upper deck), confined space entry, spreading rock on the railroad track.*

2. **Was / were the correct permit(s) specified?** *Based on the scope of work were the appropriate permits such as Lockout/Tagout, Confined Space Entry or Hot Work provided?*

3. Were hazardous materials in equipment identified? *The permit should specify the chemicals that may be present on, in or near the equipment where work is being performed**. Note: If the equipment is under a nitrogen purge or blanket this must be noted on the permit.***

4. Can workers describe hazards of materials to which they may be exposed? *Based on interviews of personnel performing the work, can they describe the basic hazards of the chemicals that may be contained in or near the equipment where work is being performed, i.e., the material is flammable and a carcinogen or the material is corrosive to the skin and eyes.*

5. **Was the correct PPE specified?** *Was the PPE portion of the work permit completed? Were there any obvious oversights such as the lack of chemical resistant clothing for line breaks or the lack of supplied air and an acid suit or fall protection when working at unprotected elevations?* ***Check the site PPE Hazard Assessment and the Line Break Procedure for more specifics.***

6. **Was the correct PPE worn?** *Verify the specified PPE was actually being worn or was readily available at the jobsite if the work was suspended or yet to have begun. Fall protection should be secured overhead to an anchor point capable of supporting 5000 lb. per person and prevent the protected individual from hitting the ground or equipment below. Maximum fall distance should not exceed six (6) feet. Lanyards should not be tied back unless specifically designed for this purpose.*

7. **Was barricading required?** *If there was a potential for people in or near the work area to be struck by falling or flying objects, hot slag or sparks or chemicals from the associated work, the surrounding area should be barricaded. If the work was being performed at an elevation (pipe rack or elevated deck), the area below should be barricaded.*

8. **Was barricading in place and of the appropriate type?** *If there is an immediate hazard, red danger barricade tape should be used with a tag attached noting who erected the barricade, the hazards and the date the work was being performed. If the hazard is a potential one, the area should be barricaded with yellow caution tape with a tag affixed noting the same exact language.*

9. **Adjoining equipment and operations checked for possible impact on the job?** *Personnel issuing the permit or their field designee **must** visit the actual work area with a representative of those who will actually perform the work to determine if the work covered by this permit could adversely impact or be impacted by other work in the area. For example, overhead welding, burning and cutting or line breaking could adversely impact insulation or painting work in, around or under the work area.*

10. **Were the appropriate gas tests specified?** *Depending on the job various gas tests may be required. For welding, burning and cutting or other hot work, a combustible gas check is mandatory. In order to get a true reading on a combustible gas detector, an O_2 reading is also required. For confined space entry, oxygen and combustibles tests are mandatory and depending on the chemical involved, toxicity testing may be required.*

11. **Were the appropriate gas tests performed and results entered on the permit?** *Verify that the specified tests were actually performed and recorded on the work permit. For confined space entry the Lab Certificate of Analysis should be available for review. The name of the person performing the test should be entered on the permit in the designated space.*

12. **Was the gas monitor calibrated in accordance with company policy?** *Verify the required calibration check was performed. Perform a leak check to assure that none of the hoses or connections are leaking. Perform a functional gas test by checking the unit with a known check gas supplied by the manufacturer. The O_2 monitor can be checked by breathing into the inlet. O_2 content should drop to approximately 16-17%.*

13. **Were the correct types of tools specified? (non-sparking, pneumatic, etc.)** *Were any special tools required for the job specified on the permit such as but not limited to: non-sparking tools or pneumatic tools in an electrically classified location?*

14. **Were the correct types of tools being used?** *Verify the tools specified on the permit were actually being used and/or available in the field.*

15. **Were the applicable permit questions answered relative to mobile crane use?** *Verify that questions 1, 2 & 3 concerning the use of mobile cranes were answered on the permit if a crane was used.*

16. **Was the crane operated within the limits specified by the lift permit?** *Verify that a lift permit has indeed been completed and that the conditions of the permit are being met. Pay close attention to the outriggers in relationship to sewer lines as well as the need for pads under the outriggers.*

17. Was contractor training verified? *If the work is being performed by a contractor check to see if the contractor performing the work is actually authorized to do so. Check the codes on his/her I.D. card.*

18. Were the appropriate authorization or approval signatures in place? *Verify that the shift foreman or other designee's signature and dates are on the permit.*

19. Was the person who completed the permit authorized to do so? *Verify that the person who actually authorized the permit was approved to do so.*

20. Were the appropriate acceptance signatures listed on the permits? *Verify that the names and/or signatures of the craftsmen performing the work are noted in the appropriate place on the bottom of the work permit.*

21. Was the permit correctly closed out by maintenance? *Verify the craftsmen performing the work completed, signed and dated the job task status on the bottom of the permit. If the job is complete, verify the appropriate signatures were in the Commissioning Section of the permit.*

22. Was the permit correctly closed out by issuing department? *Verify that the shift foreman or designee signed and dated the job task status on the bottom of the permit. If the job is complete, verify the appropriate signatures were in the Commissioning Section of the permit.*

Lockout / Tagout

23. **Were all the correct isolation points specified?** *The equipment specific Lockout – Tag out should specify the manner in which equipment is isolated and drained or vented.* ***Note: A field inspection should verify that the equipment is indeed isolated and no isolation points have been overlooked****.*

24. **Were all operations locks and tags in place?** *Verify all of the required isolation valves are locked and tagged in accordance with the equipment specific LOTO procedure. Isolation valves must be locked closed and tagged. Drain and vent or bleed valves must be tagged open. Tag numbers should be clearly indicated on the LOTO Procedure.*

25. **Were exposed workers' locks in place?** *Verify that every exposed worked (operations and maintenance) has a lock on the isolation points or the lock box. Check the number of workers in the field (on the job) and the number of locks on the isolation points or lock box.*

26. **Were exposed workers' locks identified as to ownership?** *Verify that each personal lock is identified with a tag or stencil to indicate ownership.*

27. **Were blinds installed in the correct location?** *Verify that any blinds listed on the blind list have been installed in the correct locations.*

28. **Were blinds correctly listed and tagged?** *Verify that each installed blind has an accompanying tag listed on the blind list attached to equipment-specific LOTO procedure.*

29. **Were blinds of the correct materials of construction and pressure rating?** *Check the P&ID or other PSI to determine the pressure rating for the pipe being blinded and field verify the blind installed is of the correct materials of construction and pressure rating.*

30. Were all operations tags correctly completed and hung? *Verify that all required tags on locks, valves, and blinds have been numbered correctly in the field and on the LOTO procedure or blind list. Each tag should indicate the date it was installed, by whom and what equipment is tagged.*

31. Can exposed workers locate all isolation points specified on the lockout/tagout procedure and/or blind list? *Interview exposed workers to see if they know where the isolation points are located. If there is a group lockout interview the designated person responsible for verifying the lockout to determine is he or she can identify each isolation point listed on the equipment specific LOTO Procedure and or blind list. Can contractor personnel explain how and who verifies locks are in place?*

Hot Work

32. Were the correct fire precautions specified? *Based on a site visit verify the appropriate fire prevention precautions were spelled out on the Hot Work Permit. For example, if there was a possibility of fire or slag falling on people or equipment below, were barricades and fire blankets needed and specified? Is there a need to cover cable trays or combustible materials? Should sewers be covered and water sealed?*

33. **Were area combustibles covered or protected?** *Verify that cable trays, sewers and combustible materials were protected as indicated on the permit.*

34. **Were area sewers and drains covered and water sealed?** *Verify that sewers and drains were covered and water sealed (when needed) as specified by the permit.*

35. Was the correct fire extinguisher(s) specified? *Based on the hazards of the materials involved was the correct fire suppression equipment listed on the permit. Was a carbon dioxide or dry chemical unit needed? Was a charged fire hose required?*

36. Was the correct fire extinguisher(s) readily available? *Verify the fire suppression equipment specified on the permit was available and in good condition.*

37. **Was a fire watch specified?** *Based on site Hot Work Procedures was a fire watch required? If so, verify that it was listed on the Hot Work Permit.*

38. **Was a fire watch on duty?** *If a fire watch was required verify that one was correctly posted and on the job and understood he/she was to remain there for 30 minutes after hot work was completed.*

39. **Could the fire watch accurately describe his/her duties?** *Interview the Fire Watch and verify he/she understands the requirements of the Hot Work Permit.*

40. Did the gas monitor pass a functional field or bump test at the time of the audit? *Perform a leak check to assure that none of the hoses or connections are leaking. Perform a functional gas test by checking the unit with a known check gas supplied by the manufacturer. The O_2 monitor can be checked by breathing into the inlet. O_2 content should drop to approximately 16-17%.*

41. **Was the frequency of follow-up gas tests specified?**^ *Check the permit to determine if the appropriate continuous monitoring and/or frequency of re-checks are specified.*

42. **Were follow-up or continuous monitoring requirements met and documented?** *Verify that the checks required on the permit have indeed been performed and noted on the permit. In the case of continuous monitoring verify that the unit in the field is functional and operating as intended.*

Confined Space Entry

43. Was the correct type of lighting and/or portable electric tools specified? (Explosion proof, safety low voltage, GFCI protected, double insulated, Assured Equipment Ground) *Check the work permit and the confined space entry permits to determine if the appropriate lighting and portable electric tools have been specified. If the area is an electrically classified one, the equipment in use should be rated for this service or be intrinsically safe.*

44. **Was the correct type of ventilation equipment specified?** *For example, were air operated horns specified or explosion-proof electric fans? If air movers (horns) are specified was there*

any indication as to the quality of the air supply or were the horns to be used only as exhausters? Is there a need to ground and bond the equipment?

45. **Was the specified ventilation equipment installed correctly?** *Based on permit requirements was the appropriate ventilation equipment in use? Air horns should be used as exhausters only unless the quality of air powering the unit meets CGA standards for breathing air. If explosion-proof electric fans were required, check the data plate to ensure the equipment is suitable for the electrical service. Verify that grounding and bonding is in place if necessary.*

46. Could confined space entrants describe hazards of space? *Interview the confined space entrants to see if they can describe the potential hazards and warning properties of gases and vapors that might be present, i.e., the tank or vessel might contain a carcinogen or corrosive material.*

47. **Were all confined space entrants' names listed on the entry permit?** *Verify that people working in the space have entered their names on the appropriate space(s) on the entry permit.*

48. **Was the confined space attendant's name listed on the entry permit?** *Verify that the confined space entry attendant(s)' names were listed in the appropriate section of the confined space entry permit.*

49. **Were confined space entrants wearing the required retrieval equipment?** *Verify that entrants are wearing a full body harness and/or wristlets or anklets as specified on the permit.*

50. **Could the confined space attendant describe how to call for help?** *Interview the attendant to assure that he/she knows how to call for assistance and that he/she understands under no circumstances are the attendant(s) to enter a space for rescue unless they are part of a trained rescue team and have back-up personnel on the scene.*

51. **Was there a vessel specific rescue plan developed for CSE?** *Verify there was a vessel-specific rescue plan for the entry.*

52. **Could rescue personnel describe/demonstrate vessel specific rescue plans?** *Interview members of the emergency response team to verify exactly how a space-specific rescue would be made.*

Instructions: Review the selected work permits and any additional corresponding permits (i.e., Confined Space Entry, Hot Work, etc.). Each question should be answered with a "Y" for yes, "N" for no and "N/A" for not applicable. If a question warrants a comment to clarify an audit finding add the comment in the space adjacent to the applicable audit questions. Additional comment space is available at the bottom of each page of the Permit Audit Form.

Permit Audit Form **Work Permit Number:** Unit/Area _____ Date _____ Time _____ Performed By _____ Reviewed With _____	**Permit Compliance Status**	
WORK PERMIT	**Y, N, N/A**	**Comments**
1. Was the scope of work correctly described?		
2. Was / were the correct permit(s) specified?		
3. Were hazardous materials in equipment identified?		
4. Can workers describe hazards of materials to which they may be exposed?		
5. Was the correct PPE specified?		
6. Was the correct PPE worn?		
7. Was barricading required?		
8. Was barricading in place and of the appropriate type?		
9. Adjoining equipment and operations checked for possible impact on the job?		
10. Were the appropriate gas tests specified?		
11. Were the appropriate gas tests performed and results entered on the permit?		
12. Was the gas monitor calibrated in accordance with company policy?		
13. Were the correct types of tools specified? (non-sparking, pneumatic, etc.)		
14. Were the correct types of tools being used?		
15. Were the applicable permit questions answered relative to mobile crane use?		
16. Was the crane operated within the limits specified by the lift permit?		
17. Was contractor training verified?		
18. Were the appropriate authorization or approval signatures in place?		
19. Was the person who completed the permit authorized to do so?		
20. Were the appropriate acceptance signatures listed on the permits?		
21. Was the permit correctly closed out by maintenance?		
22. Was the permit correctly closed out by issuing department?		
Total **"Bolded" "NO"** answers		
Total "Non-bold" **"NO"** answers		
LOCKOUT / TAGOUT	**Y, N, N/A**	**Comments**
23. Were all the correct isolation points specified?		
24. Were all operations locks in place?		
25. Were exposed workers' locks in place?		
26. Were exposed workers' locks identified as to ownership?		
27. Were blinds installed in the correct location?		
28. Were blinds correctly listed and tagged?		
29. Were blinds of the correct materials of construction and pressure rating?		
30. Were all operations tags correctly completed and hung?		
31. Can exposed workers locate all isolation points specified on the lockout/tagout procedure and/or blind list?		
Total **"Bolded" "NO"** answers		
Total "Non-bold" **"NO"** answers		

Item No.	Comment / Question

Instructions: Review the selected work permits and any additional corresponding permits (i.e., Confined Space Entry, Hot Work, etc.). Each question should be answered with a "Y" for yes, "N" for no and "N/A" for not applicable. If a question warrants a comment to clarify an audit finding add the comment in the space adjacent to the applicable audit questions. Additional comment space is available at the bottom of each page of the Permit Audit Form.

Permit Audit Form Unit/Area _____ Date _____ Time _____ Performed By _____ Reviewed With _____	**Permit Compliance Status**	**Comments**
HOT WORK	**Y, N, N/A**	
32. Were the correct fire precautions specified?		
33. Were area combustibles covered or protected?		
34. Were area sewers and drains covered and water sealed?		
35. Was the correct fire extinguisher(s) specified?		
36. Was the correct fire extinguisher(s) readily available?		
37. Was a fire watch specified?		
38. Was a fire watch on duty?		
39. Could the watch accurately describe his/her duties?		
40. Did the gas monitor pass a functional field or bump test at the time of the audit?		
41. Was the frequency of follow-up gas tests specified?		
42. Were follow-up or continuous monitoring requirements met and documented?		
Total **"Bolded" "NO"** answers		
Total "Non-bold" **"NO"** answers		
CONFINED SPACE ENTRY	**Y, N, N/A**	**Comments**
43. Was the correct type of lighting and/or portable electric tools specified? (Explosion proof, safety low voltage, GFCI protected, double insulated, Assured Equipment Ground)		
44. Was the correct type of ventilation equipment specified?		
45. Was the specified ventilation equipment installed correctly?		
46. Could confined space entrants describe hazards of space?		
47. Were all confined space entrants' names listed on the entry permit?		
48. Was the confined space attendant's name listed on the entry permit?		
49. Were confined space entrants wearing the required retrieval equipment?		
50. Could the confined space attendant describe how to call for help?		
51. Was there a vessel specific rescue plan developed for CSE?		
52. Could rescue personnel describe/demonstrate vessel specific rescue plans?		
Total **"Bolded" "NO"** answers		
Total "Non-bold" **"NO"** answers		
TOTALS:		

Item No.	Comment / Question

Overall Work Permit Scoring Section

Total Number of "Serious" Non-Compliance Issues: _____

Total Number of "Significant" Non-Compliance Issues: ____