

Permit Authorized Individuals

Navy Ship on Fire



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Course Objectives

Shipyard Worker Cutting Metal Plate



Applicable References

Regulatory Bodies Logos



Abbreviations

Shipyard Competent Person Testing



- **GFWS**
- **MCC**
- **NFPA**
- **PAI**
- **SYCP**

Definitions

Worker Going Into a Confined Space



- **Confined Space**
- **GFWS**
- **MCC**
- **OSHA Log**

More Definitions

Shipyard Worker Welding



- PAI
- Adjacent
Space
- Hot Work
- SYCP

More Definitions

Weapons in a Magazine Space



- Armory
- Magazine Space

Introduction



QUIZ!

Who is a PAI?

Two Workers Discussing Form

Permit

Authorizing

Individual

- **Starts Hot Work**
- **Stops Hot Work**



Why is a PAI Needed?

Ship Fire Being Extinguished



The Four Most Common Causes of Fire On-Board

Ship Fire Being Extinguished



- Leakage in high pressure pipes
- Electrical failure or overload
- *Damage during maintenance*
- Human fault

Advantages and Disadvantages

Question Mark and Figure With Hand on Chin



Critical Operations

Shipyard Worker Cutting a Pipe

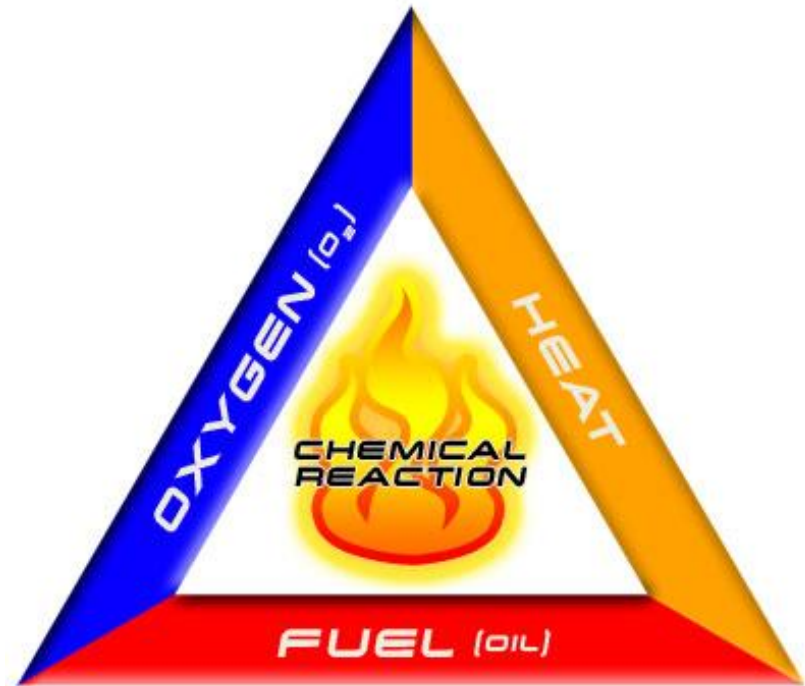


- **Hot Work**
- **Confined Spaces**
- **Weapons Storage and Magazine Spaces**

Hot Work – The Fire Triangle

The Fire Triangle

- Heat
- Fuel
- Oxygen



Hot Work

Sparks from Cutting a Pipe



Your Hot Work

Shipyard Worker Performing Hot Work



Hot Work



QUIZ!

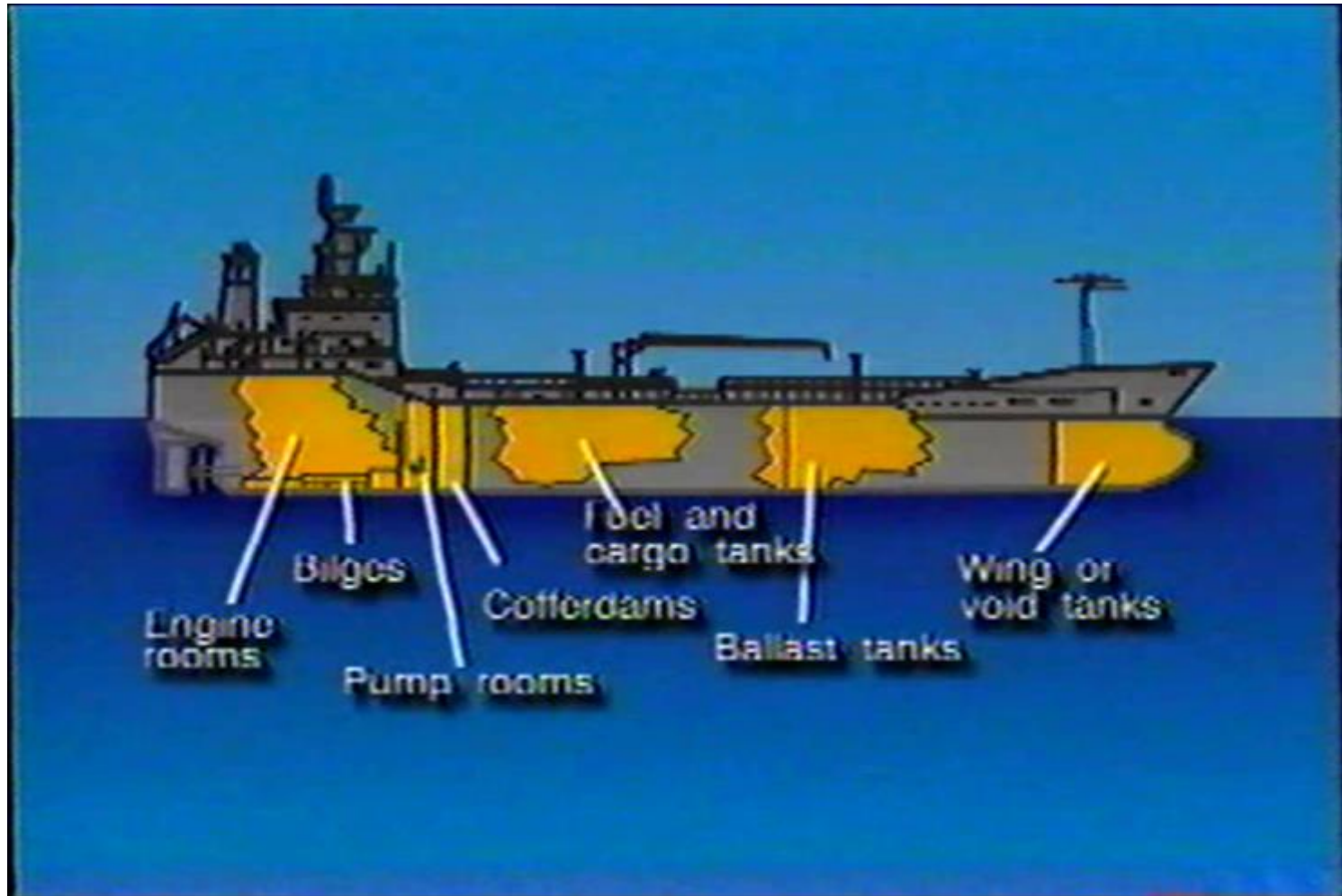
Confined Spaces

Small Confined Space



Common Confined Spaces

Side of Ship Showing Confined Spaces



Physical & Atmospheric Hazards

Marine Chemist Taking a Reading



Additional Hazards

Shipyard Worker Inspecting a Tank



Confined Space Fatal Facts

Tank Opening



Confined Space Exercise

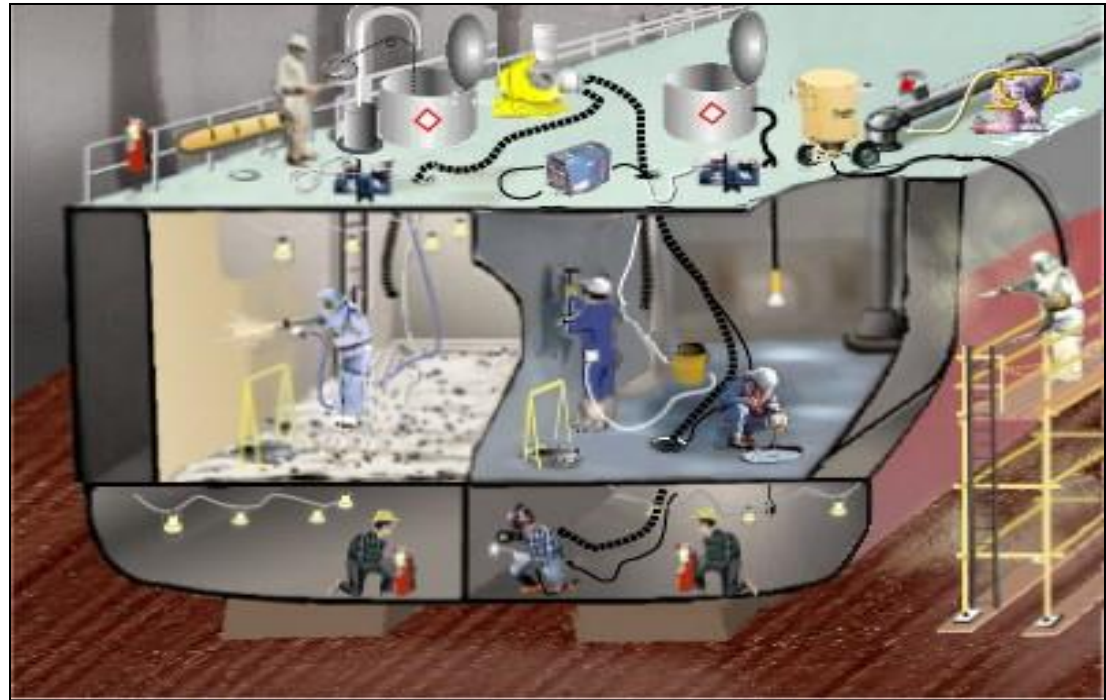
Man Being Rescued



Definitions – Adjacent Space

Workers in Confined Spaces

- Adjacent Spaces
- Dangerous Atmosphere
- Gas Freeing
- Immediate Danger to Life or Health



Definitions – Hotwork

Welder In Full PPE



Confined Spaces Terminology



QUIZ!

Marine Chemist

Marine Chemist Peering Into Confined Space



Testing and Pipelines

Piping System in a Confined Space



- Testing
- Pipelines

Order of Atmospheric Testing

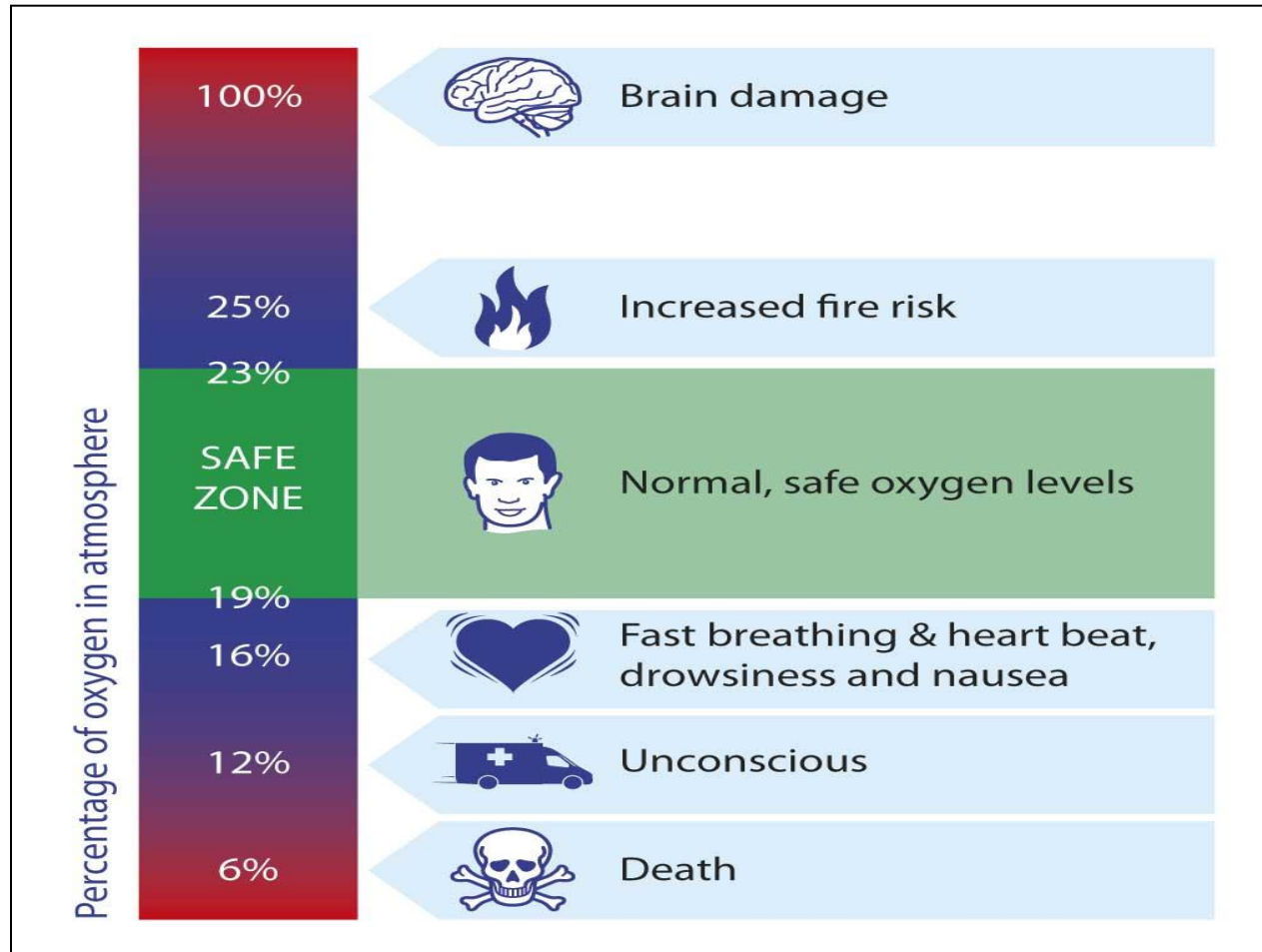
Gas Free Meter



1. Oxygen
2. Flammable atmospheres
3. Toxic atmospheres

Oxygen Levels

Oxygen Level Graph with Pictorial



Enriched

Acceptable

Deficient

Flammable Atmospheres

Worker Entering a Confined Space



What Should Have Been Done Differently?

Person with Video Camera



Toxic Atmospheres

Large Tank with Piping System



- Cargo Tanks
- Ship Holds
- Fuel Tanks
- Sewage/Gray Water Tanks
- Piping/pumps that carry toxic materials

Marine Chemist Certificate

MARINE CHEMIST CERTIFICATE		Serial	619-02366			
		Page 1 of 1				
[Redacted]		USN	[Redacted]			
Survey requested by	Vessel Owner or Agent	Date				
USS GABRIELLE GIFFORDS	LCS - 12	[Redacted]				
Vessel	Type of Vessel	Specific Location of Vessel				
N/A (DFM) X 3	O ₂ , LEL, Visual, CO, H ₂ S, VOC	12:00				
Last Three 3 Loadings	Tests Performed	Time Survey Completed				
Inspected Spaces: PASSAGEWAY 1-17-0-L; PILOT HOUSE 04-36-0-C; SERVICE EQUIPMENT ROOM 03-36-0-Q; No. 2 AUXILIARY MACHINERY ROOM 3-36-0-E; FAN ROOM / PLENUM PORT AND STBD O3 LEVEL FR 44 APPROX.; MAGAZINES 04-48-1-M, 04-48-2-M; STOREROOM 02-48-1-A; MISSION BAY 1-48-0-Q; DOOR FRAME INACCESSIBLE VOID (PORT SIDE, FRAME 48, MAIN DECK); WATER MIST PUMP FOAM 1-48-6-Q; AMAH VOID 3-36-2-V; No. 5 AUXILIARY MACHINERY ROOM 3-62-0-E **; WEAPONS EQUIPMENT ROOM 01-50-1-Q; SEARAM EQUIPMENT LOCKER 05-53-0-A		Safety Designations: SAFE FOR HOT WORK ATMOSPHERE SAFE FOR WORKERS				
—GFWS 67498, 67499, 67501, 67502, 67504, 67508						
Instructions NATURE OF WORK IS STRUCTURAL REPAIRS AND MODIFICATIONS, AS PER GFWS ITEMS. ** NO HOT WORK IN OR ON FUEL TANKS 3-62-3-F, 3-67-1-F: PIPING IS NOT COMPLETELY SECURED..						
Test Results						
Applies to all inspected spaces listed above	% O ₂	% LEL	CO	H ₂ S	VOC	
	20.8%	0%	< 1.0 ppm	< 1.0 ppm	< 1.0 ppm	
In the event of physical or atmospheric changes affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, this certificate is voided; spaces not listed on the Certificate are not to be entered unless authorized on another Certificate and/or maintained in accordance with OSHA 29 CFR 1915; or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist. Unless otherwise stated on the Certificate, all spaces and affected adjacent spaces are to be reinspected daily or more often as necessary by the competent person or the authority having jurisdiction as applicable in support of work prior to entry or recommencement of work.						

1

2

3

Certificate Exercise

1. Does this certificate allow for any hot work?
2. Is it safe for workers?
3. Where can they not do hot work?
4. How many Gas Free Work Scope numbers are there?
5. What is the oxygen level?
6. What warning do you see?

SYCP

SYCP Entering a Confined Space



Daily Update Log

What does green mean?

MSR Shipboard Procedures

Colored Certification Designations

SAFE FOR WORKING AND SAFE FOR NOT WORKING

DATE: _____ TIME: _____

NAME: _____ ADDRESS: _____ CITY: _____ STATE: _____

W. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.

W. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.

[illegible][illegible]

NOT SAFE FOR WORKING - NOT SAFE FOR NOT WORK

DATE: _____ TIME: _____

REPORTED BY: _____

REPORTED TO: _____

LOCATION: _____

DESCRIPTION: _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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RESTRICTED ENTRY - NOT SAFE FOR HOT WORK

NAME: _____ DATE: _____

SAFETY DATA SHEET: _____ JOB: _____

WORK AREA: _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Safe for Workers and Hot Work

Safe For Hot Work Certificate

[illegible]

- Oxygen Content
22% or less
- Flammable Vapors
- Concentrations
maintained



[illegible]

- Not Safe for Workers
- Not Safe for Hot Work
- IDLH

Safe for Workers-Not Hot Work

Safe for Workers Certificate

[illegible]

- Oxygen Content
- Flammable Vapors
- Toxic Materials
- Residues

Enter With Restrictions!

An Enter With Restrictions Certificate

[illegible]

- Engineering Controls
- Specific PPE
- Time Restrictions

Confined Space Exercise

Answer both questions.

1. Why could it be safe to do cold work in a confined space but not hot work?

2. What could change that would require a marine chemist or competent person to re-test a confined space?

Defining Change of Condition

Person Welding



Condition Changes

Flammable/Hazardous Materials in Bilge Pockets

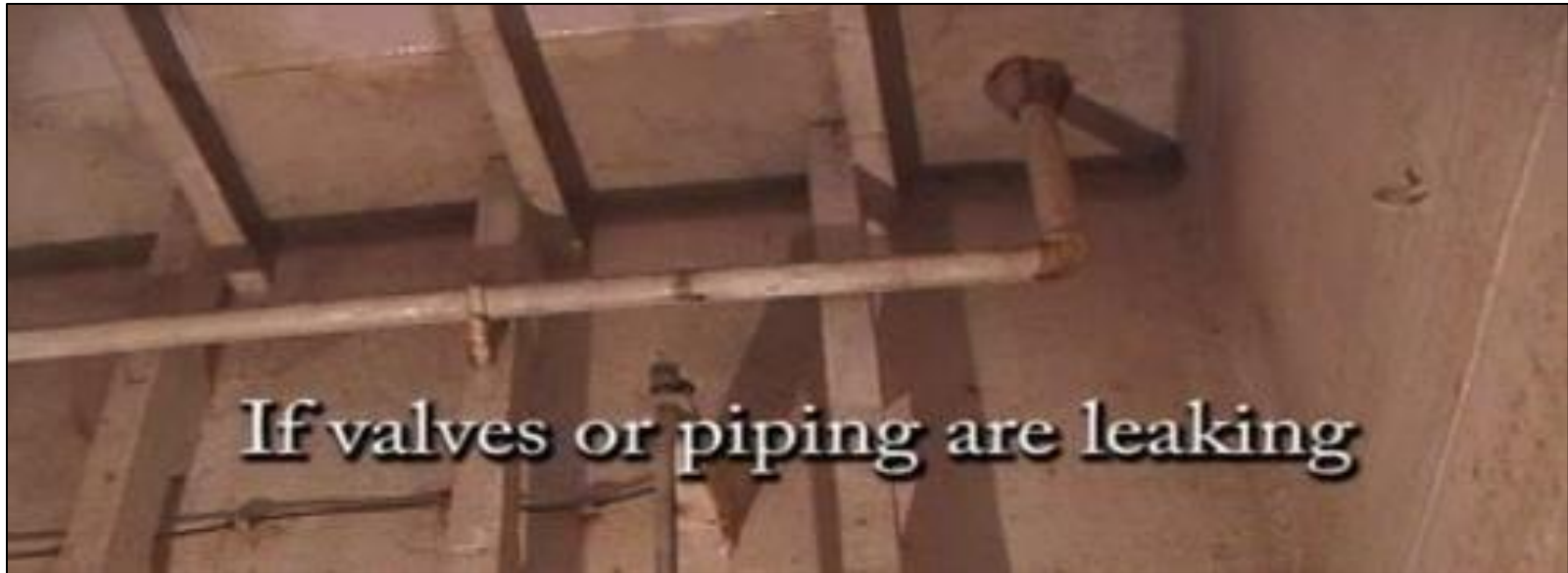


If there is a change in condition while you are in the space, stop hot work and leave the space to report the condition.

YOU ARE THE MOST IMPORTANT MONITOR OF CONFINED SPACE CONDITIONS. You work there!

Causes of Change in Conditions

Piping in a Confined Space



- Transfer of Ballast
- Manipulation of Valves
- Transfer of Fuel or Oil
- Movement of the Vessel

Maintenance of Safe Conditions

SYCP Looking in a Tank



- Tests / Inspects
- Retests/Inspects if space fails
- Tests / Inspects every 24 hours



Log of Inspections (Update)

Log of Test Inspection Form

LOG OF INSPECTIONS AND TESTS BY SHIPYARD COMPETENT PERSON (SYCP)

SAFE FOR WORKERS AND SAFE FOR HOT WORK

SEGURO PARA TRABAJADORES Y PARA SOLDADORES

JOB NUMBER:		VESSEL: USS MOBILE BAY		CLASS OF VESSEL: C&H		DATE: 11/27/2008	
NAME OF SPACE/COMPARTMENT # (Last Cargo): HPAC Room 8-464-3-Q				# Of Employees: 1			

RESULTS OF INSPECTION								
Date	Time	O ₂	LEL%	H ₂ S	CO	VOC	Instructions	Initials
11/27	1410	20.8	0	<1	<1	<1	Read Marine Chemist Cert	JDR
11/27	2000	20.9	0	0	0	0	Read MCC	JD
11/28	0630	20.9	0	0	0	0	Read MCC	JD

RESULTS OF INSPECTION								
Date	Time	O ₂	LEL%	H ₂ S	CO	VOC	Instructions	Initials

FORM 2008 (FRONT)

REVIEWED: 0410

Parameters:

LELH = 92

Below 19.5%
Above 22%

CO = 25 ppm
H₂S = 10 ppm

VOC = Hazard Specific

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Inspection Logs Posted

Certification In Plastic Hung at Entrance



- Posted
- Maintained
- Available

Rescue



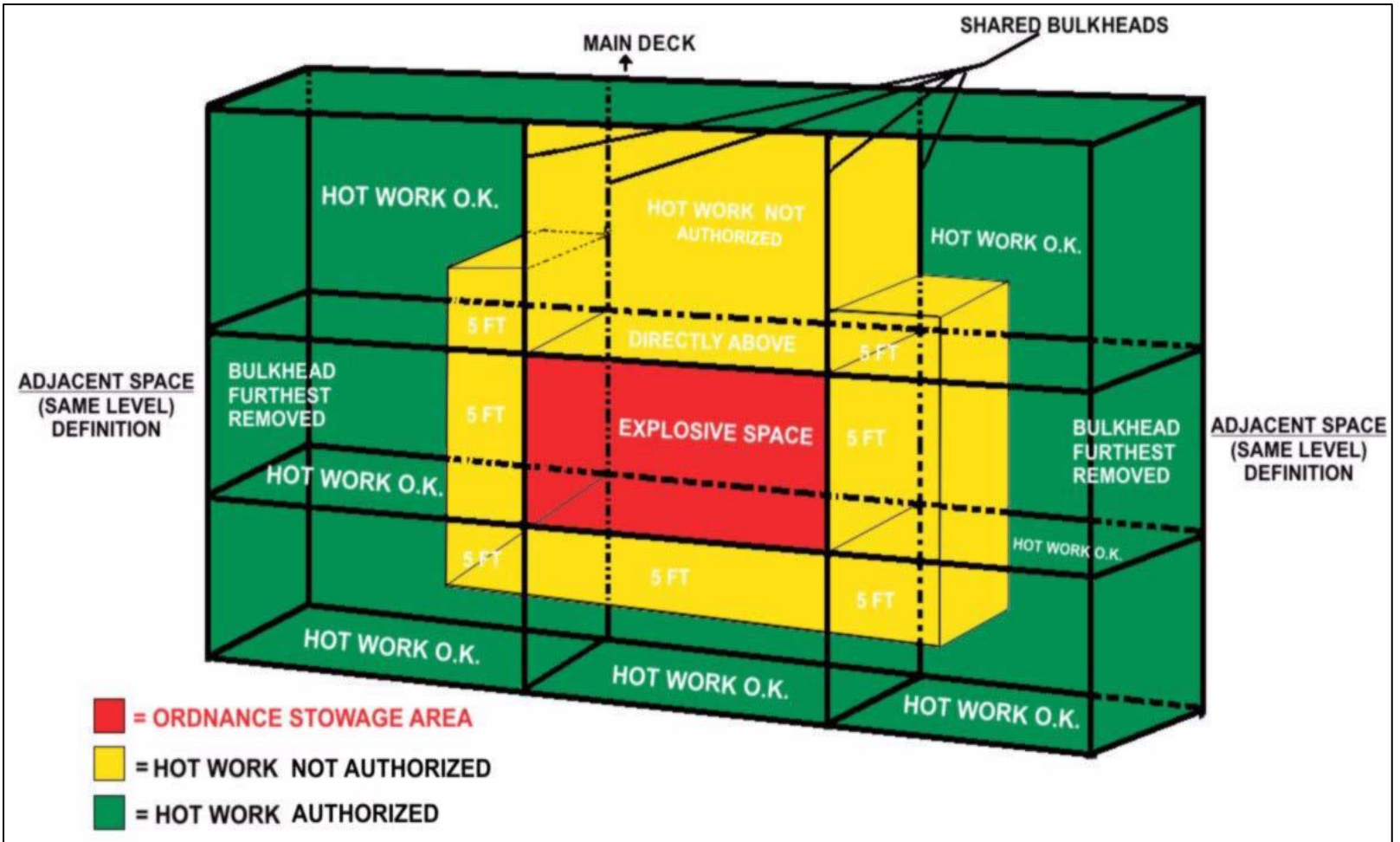
Weapons Storage & Magazine Spaces

Vertical Launching System



Adjacent/Connecting Spaces

Spaces Connected to an Explosive Space



Confined Spaces



QUIZ!

Potential Waiver to 5 Foot Rule

Drum Loader Room



- Contact Supervisor and Safety
- Contact Fleet Commander

What Are the PAI's Responsibilities?

Go and Stop Sign



Fire Hazard Assessment

Regulatory Body Logos



Cleanliness/Hazard Controls

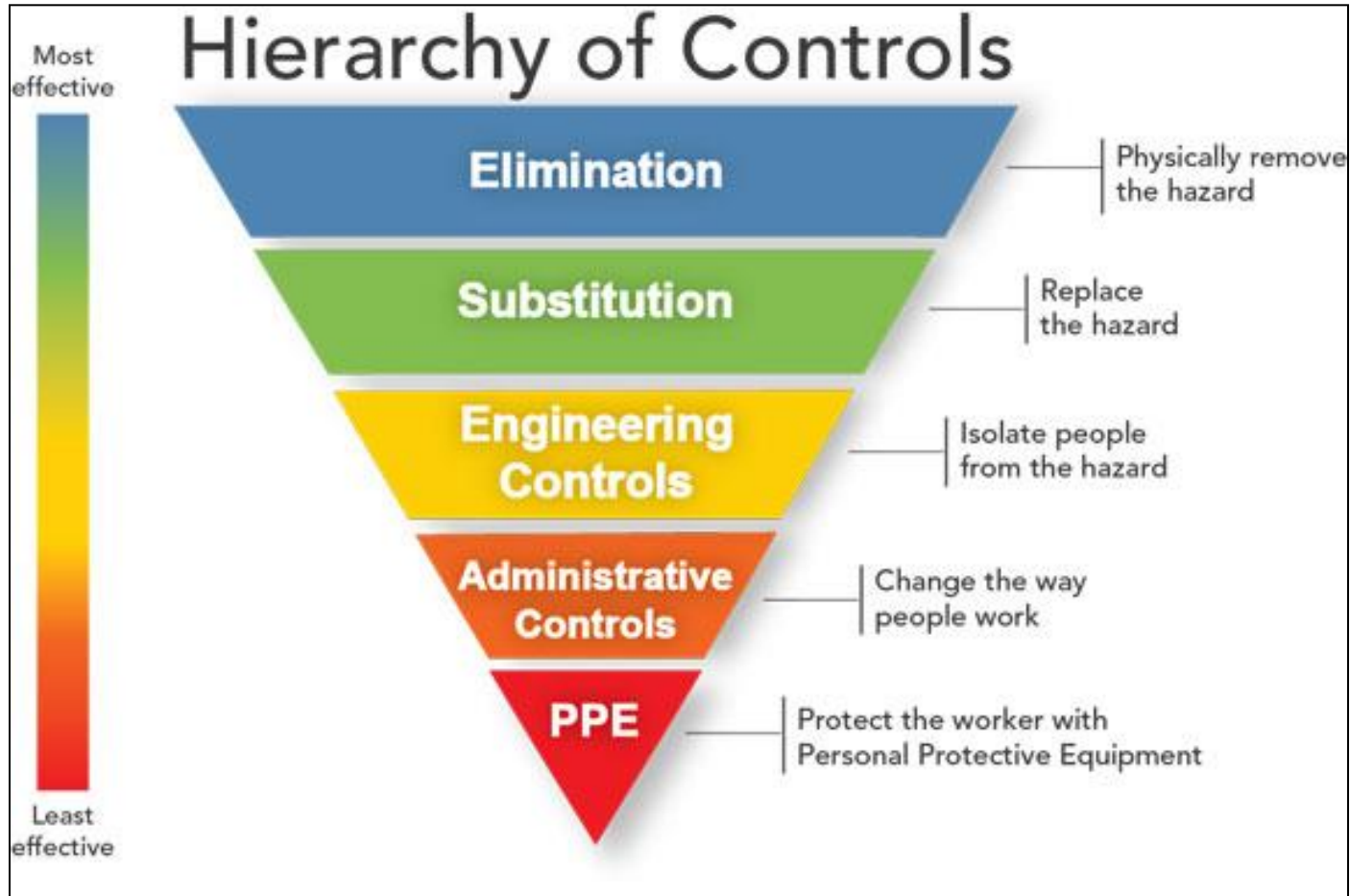
Very Messy Unorganized Deck



- Cleanliness
- Hazard Controls

Hazard Controls

Inverted Pyramid



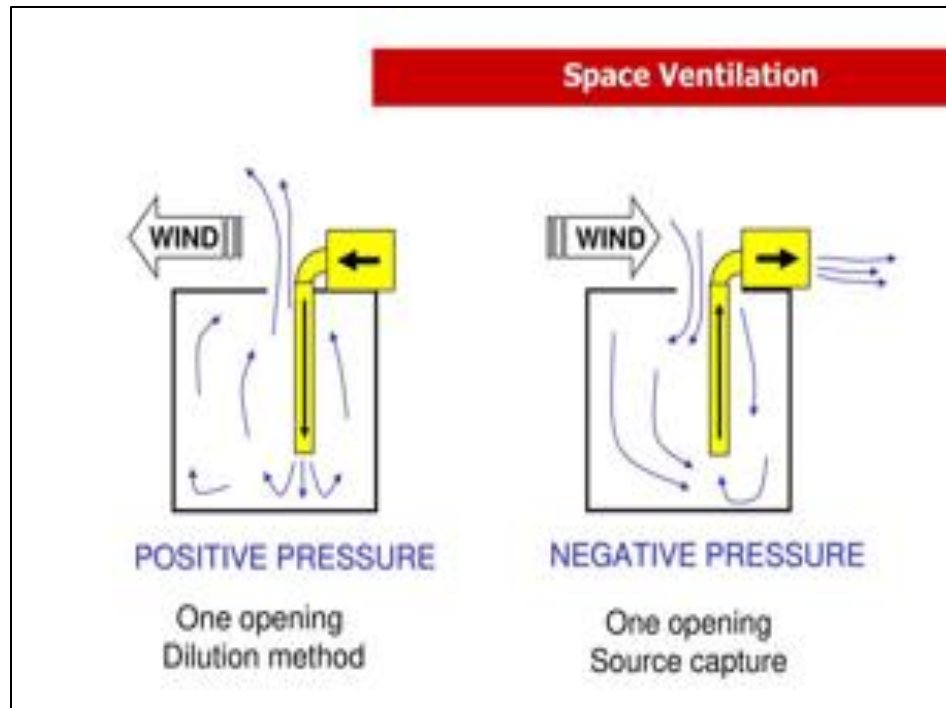
Ventilation

Worker Using Fume Extractor



Negative Pressure Ventilation

Types of Ventilation and Welding Fume Extractor



Materials

Flammable Testing Material Product



More on Materials

Flammable Testing Material Product



Fire-Resistant VS. Fire Retardant

Ship's Break Room with Flammable Contents




- Fire Resistant
- Fire Retardant

PAI's Administrative Controls

Exercise

Hot Work Permit

	<h2 style="text-align: center;">HOT WORK PERMIT</h2> <p style="text-align: center;"><i>References: NFPA 51B / 306 / OSHA 1915 NAVSEA Standard Item 009-07 & 009-08</i></p>		<i>Insert Company Name / Logo</i>	
<p><i>This Hot Work Permit is effective for 24 hours unless a shorter period of time is specified, or conditions change. Loss of gas free status in the location(s) below cancels this Hot Work Permit.</i></p>			Form Number:	
			Permit Expiration Date & Time:	
Section I: Hot Work Permit Supervisor Request				
Start Date:	Start Time:	Ship / Vessel:	Vessel Location:	
Compartment Name:			Compartment Type: <input type="checkbox"/> Confined <input type="checkbox"/> Enclosed <input type="checkbox"/> Open	
Compartment #:			Location in Compartment: <input type="checkbox"/> Deck <input type="checkbox"/> Bulkhead <input type="checkbox"/> OVHD <input type="checkbox"/> Stanchion <input type="checkbox"/> Piping System: <input type="checkbox"/> Upper LVL <input type="checkbox"/> Mid LVL <input type="checkbox"/> Lower LVL	
Ship's Contract #:			Marine Chemist Certificate (MCC)/ Shipyard Competent Person (SCP) Required in Space or Adjacent Space or System? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Ship's Item #:			Safety/MCC/SCP Instructions / Gas Free Scope & Log :	
Fire Watch Count:				

PPE

Different Types of PPE-Grinder Wearing PPE



Fire Watch

Welder With Fire Watch



Fire Watch Requirements

Sparks – Fire Watch at Ready



30-Minute Rule!

Navy Ship Sinking Due to Fire

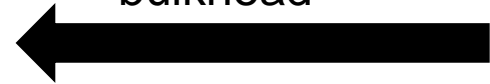


More Fire Watch Requirements

Fire Watch at Ready Watching Hot Worker



Firewatch posted
on other side of
bulkhead



Firewatch
posted on deck
below



Fire Watch Communications

Fire Watches and Hot Workers



Fire Extinguishing Equipment

Fire Extinguishers



PAI'S Responsibilities



QUIZ!

PAI'S Responsibilities Quiz



QUIZ !!

How Does the PAI Perform Their Duties?

Hot Work Notice Sign



1. Assessment
2. Hot Work Permit
3. Permit Validation
4. Permit Closeout

Definitions

PAI – Fire Watch – Hot Worker



Fire Hazard Assessment Checklist

Paint Removed a Minimum of 4 Inches



How Could This Have Occurred?

Recent Fire On-Board



Be Thorough In Your Assessment!

Bulkhead-Hot Work Area-Source of Sparks



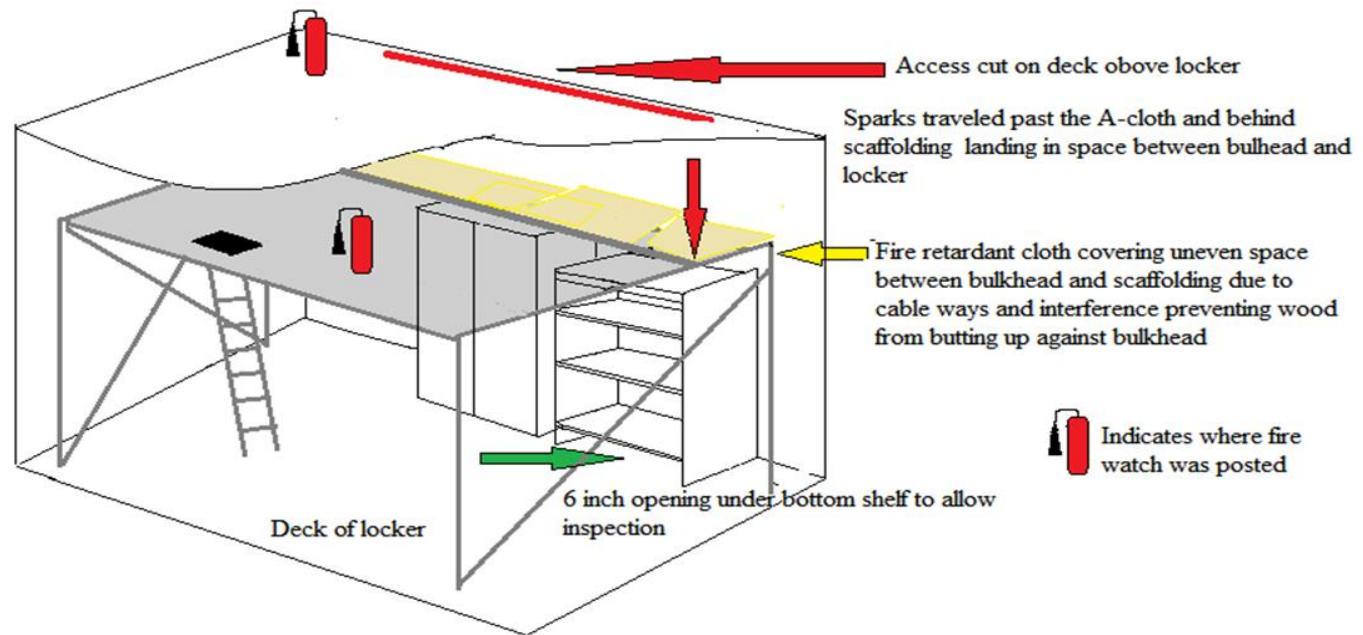
Hot Work Through
Bulkhead

Weld Sparks From
Inside Out

Source of Sparks

Protecting Restricted Areas

Restricted Area



Hot Work Permit

Hot Work Form

Insert Company Name / Logo

Form Number:

*Permit Expiration
Date & Time:*

This Hot Work Permit is effective for 24 hours unless a shorter period of time is specified, or conditions change. Loss of gas free status in the location(s) below cancels this Hot Work Permit.

Form Number:

*Permit Expiration
Date & Time:*

Section I: Hot Work Permit Supervisor Request

Start Date:	Start Time:	Ship / Vessel:	Vessel Location:	
Compartment Name:			Compartment Type: <input type="checkbox"/> Confined <input type="checkbox"/> Enclosed <input type="checkbox"/> Open	
Compartment #:			Location in Compartment: <input type="checkbox"/> Deck <input type="checkbox"/> Bulkhead <input type="checkbox"/> OVHD <input type="checkbox"/> Stanchion	
Ship's Contract #:			<input type="checkbox"/> Piping System: <input type="checkbox"/> Upper LVL <input type="checkbox"/> Mid LVL <input type="checkbox"/> Lower LVL	
Ship's Item #:			Marine Chemist Certificate (MCC)/ Shipyard Competent Person (SCP) Required in Space or Adjacent Space or System? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Fire Watch Count:			Safety/MCC/SCP Instructions / Gas Free Scope & Log :	
Work Authorization Form (WAF) Required? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Adjacent/Affected Spaces, Name & Compartment Numbers:	Current Gas Free Status:	Enter with Restrictions?	Type of Work:	
Scope of Work:	<input type="checkbox"/> Not Required <input type="checkbox"/> Safe for Workers <input type="checkbox"/> Not Safe for Workers <input type="checkbox"/> Safe for Hot Work <input type="checkbox"/> Limited Hot Work <input type="checkbox"/> Inerted Atmosphere <input type="checkbox"/> Enter with Restrictions <input type="checkbox"/> Not Safe for Hot Work	(List Restrictions)	<input type="checkbox"/> Grinding <input type="checkbox"/> Brazing <input type="checkbox"/> Welding <input type="checkbox"/> Stainless Welding <input type="checkbox"/> Air Arcing <input type="checkbox"/> Plasma Cutting	<input type="checkbox"/> Other (list below):
Supv Name:	Supv Signature:	Supv Badge:	Supv Phone #:	

Notification to Ship's Force

Section Two Signature Line

Section II: Ship's Force (S/F) Notification Acknowledgement *(S/F acknowledgement of notification of request as submitted above)*

Ship's Force Signature:

Date:

- ***Note: This is Ship's Force Notification – not authorization!***

Process to Authorize Hot Work

Section I and Section II of Hot Work Permit

This Hot Work Permit is effective for 24 hours unless a shorter period of time is specified, or conditions change. Loss of gas free status in the location(s) below cancels this Hot Work Permit.

Form Number:	
Permit Expiration Date & Time:	

Section I: Hot Work Permit Supervisor Request

Start Date:	Start Time:	Ship / Vessel:	Vessel Location:
Compartment Name:		Compartment Type: <input type="checkbox"/> Confined <input type="checkbox"/> Enclosed <input type="checkbox"/> Open Location in Compartment: <input type="checkbox"/> Deck <input type="checkbox"/> Bulkhead <input type="checkbox"/> OVHD <input type="checkbox"/> Stanchion <input type="checkbox"/> Piping System: <input type="checkbox"/> Upper LVL <input type="checkbox"/> Mid LVL <input type="checkbox"/> Lower LVL	
Compartment #:			
Ship's Contract #:		Marine Chemist Certificate (MCC)/ Shipyard Competent Person (SCP) Required in Space or Adjacent Space or System?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Ship's Item #:		Safety/MCC/SCP Instructions / Gas Free Scope & Log :	
Fire Watch Count:			
Work Authorization Form (WAF) Required? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Adjacent/Affected Spaces, Name & Compartment Numbers:	Current Gas Free Status:	Enter with Restrictions?	Type of Work:
Scope of Work:	<input type="checkbox"/> Not Required <input type="checkbox"/> Safe for Workers <input type="checkbox"/> Not Safe for Workers <input type="checkbox"/> Safe for Hot Work <input type="checkbox"/> Limited Hot Work <input type="checkbox"/> Inerted Atmosphere <input type="checkbox"/> Enter with Restrictions <input type="checkbox"/> Not Safe for Hot Work	(List Restrictions)	<input type="checkbox"/> Grinding <input type="checkbox"/> Brazing <input type="checkbox"/> Welding <input type="checkbox"/> Stainless Welding <input type="checkbox"/> Air Arcing <input type="checkbox"/> Plasma Cutting
			<input type="checkbox"/> Other (list below):
Supv Name:	Supv Signature:	Supv Badge:	Supv Phone #:

Section II: Ship's Force (S/F) Notification Acknowledgement (S/F acknowledgement of notification of request as submitted above)

Ship's Force Signature:	Date:
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Hot Work Authorization Continued

Section III of Hot Work Permit Form

Section III: Hot Work Operator (HWO) / Fire Watch (FW) / Permit Authorizing Individual (PAI) / Hot Work Supervisor (HWS)										
Shift Condition Verification										
[III.A] HWO to complete, <u>Each</u> FW to validate, and PAI/HWS to verify conditions 1-11 below prior to the start of hot work.		HWO Verify Each Shift						PAI/HWS Verify (Initials)		
		1 st		2 nd		3 rd		Shift		
		SAT	N/A	SAT	N/A	SAT	N/A	1 st	2 nd	3 rd
1	Compliant fire extinguisher(s) [seal, pin, tag, & charged].	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
2	Clear of combustibles (35FT) & flammable liquids (50 FT) and/or fire-retardant containment erected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
3	Verify SCP log has been updated daily or as often as necessary to maintain atmospheric conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
4	MCC / Gas Free Log / Gas Free Work Scope specified, read & verified by each HWO & FW.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
5	Qualified FW assigned (must have proof of qualification and be identified as FW).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
6	HWO has ensured FW has immediate access, and established communications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
7	Ensure proper working ventilation established in all required / affected areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
8	Paint removed a minimum of 4 inches from hot work on all affected surfaces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
9	Lagging removed a minimum of 12 inches from hot work area & remaining lagging is covered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
10	No hot work within 50 feet of a dust collector, fuel cell or flammable liquid storage locker.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
11	HWO verifies approved Work Authorization Form (WAF) posted for hot work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
[III.B] Each FW must verify conditions of III.A above and fill in the rows below. PAI/HWS to validate conditions before work may begin.										
Shift	Name (Last, First) & Company Name	Badge #	Signature	Time	Comments					

Hot Work Authorization Continued

Section IIIC and IIID of Hot Work Permit Form

[III.C] Each HWO must verify conditions of III.A above and fill in the rows below. PAI/HWS to validate conditions before work may begin.					
Shift	Name	Badge #	Signature	Time	Comments

[III.D] PAI / HWS must verify the conditions listed in III.A are satisfactory and fill in the rows below to authorize the start of hot work.					
Shift	Name	Badge #	Signature	Time	Comments

Change of Conditions

Section IIIA with Non-Compliance of Permit Form

III.A] HWO to complete, <u>Each</u> FW to validate, and PAI/HWS to verify conditions 1-11 below prior to the start of hot work.		HWO Verify Each Shift						PAI/HWS Verify (Initials)		
		1 st		2 nd		3 rd		Shift		
		SAT	N/A	SAT	N/A	SAT	N/A	1 st	2 nd	3 rd
1	Compliant fire extinguisher(s) [seal, pin, tag, & charged].	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
2	Clear of combustibles (35FT) & flammable liquids (50 FT) and/or fire-retardant containment erected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
3	Verify SCP log has been updated daily or as often as necessary to maintain atmospheric conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
4	MCC / Gas Free Log / Gas Free Work Scope specified, read & verified by each HWO & FW.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
5	Qualified FW assigned (must have proof of qualification and be identified as FW).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
6	HWO has ensured FW has immediate access, and established communications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
7	Ensure proper working ventilation established in all required / affected areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
8	Paint removed a minimum of 4 inches from hot work on all affected surfaces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
9	Lagging removed a minimum of 12 inches from hot work area & remaining lagging is covered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
10	No hot work within 50 feet of a dust collector, fuel cell or flammable liquid storage locker.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
11	HWO verifies approved Work Authorization Form (WAF) posted for hot work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Permit Validation

Section IV of Hot Work Permit

Section IV: PAI / HWS Surveillance					
Conduct a minimum of ONE Surveillance per shift while work is in progress to ensure conditions have not changed.					
Shift	Time	Print PAI / HWS Name	PAI / HWS Badge#	PAI / HWS Signature	Comments

- PAI Re-Authorizes During Every shift
- Use the Back of the Hot Work Permit to Re-Authorize
- Validation May be Done by Any Authorized PAI

Hot Work Permit Close-Out

Section VI of Hot Work Permit-Permit Closure

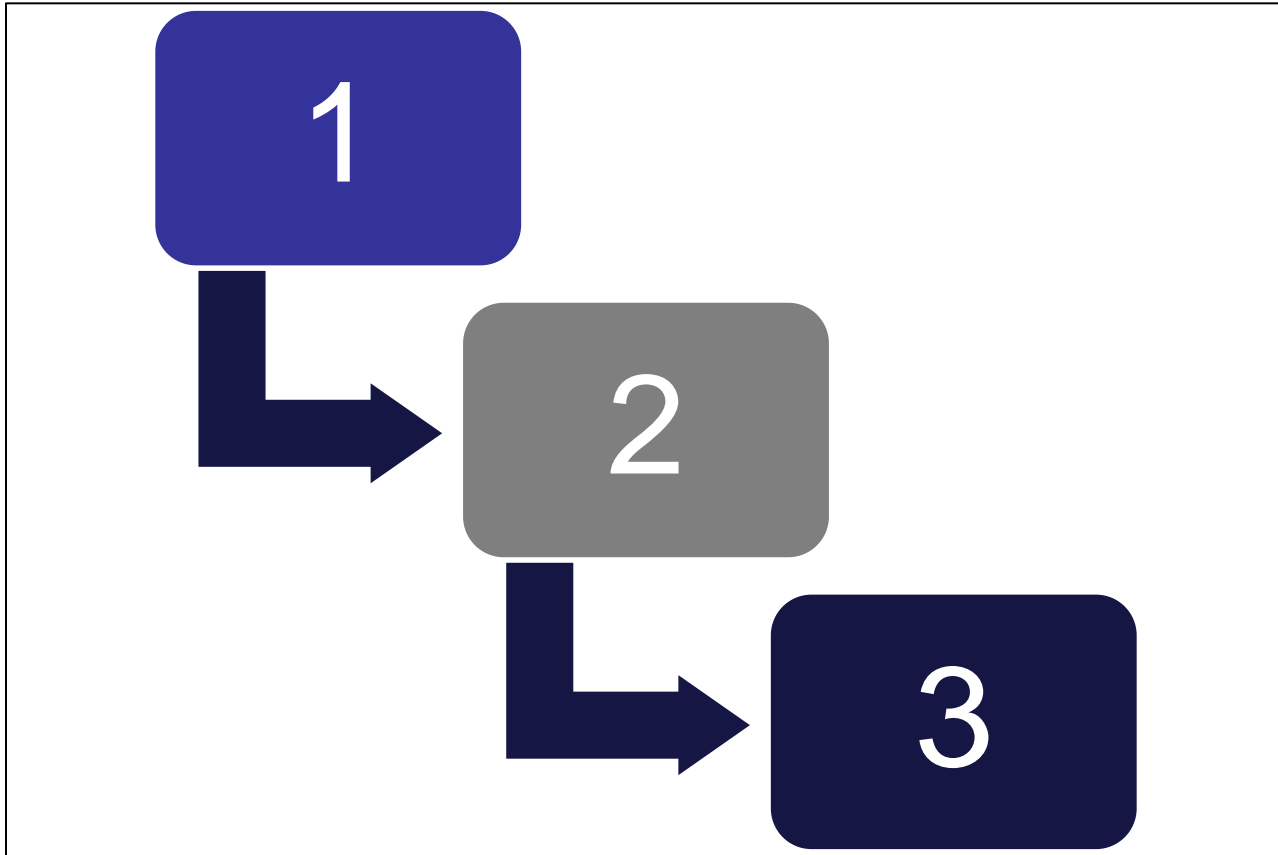
Section VI: Permit Closure	
This section closes the Hot Work Permit. Once signed, remove this permit and retain the document with the appropriate entity, as noted below.	
HWO or PAI Signature:	This section closes out the Hot Work Permit. Once signed, the permit shall be removed and turned in to the appropriate entity for retention as noted below.

PLEASE NOTE: Upon completion of work, remove and retain this form for in accordance with company policy.

- Hot Work Operator Returns Permit to PAI
- PAI Files With QA Documents

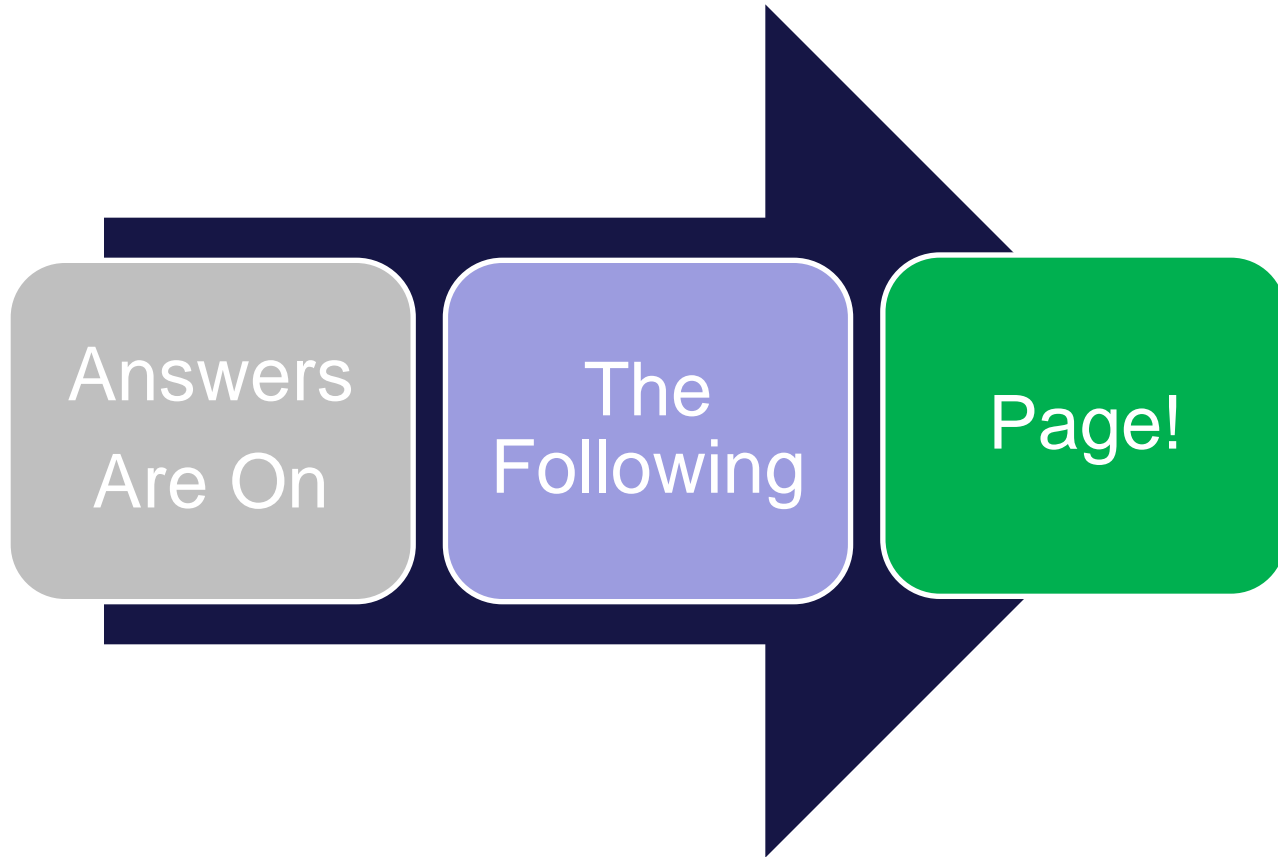
The Permit Process Exercise

Process Illustrated with 1-2-3



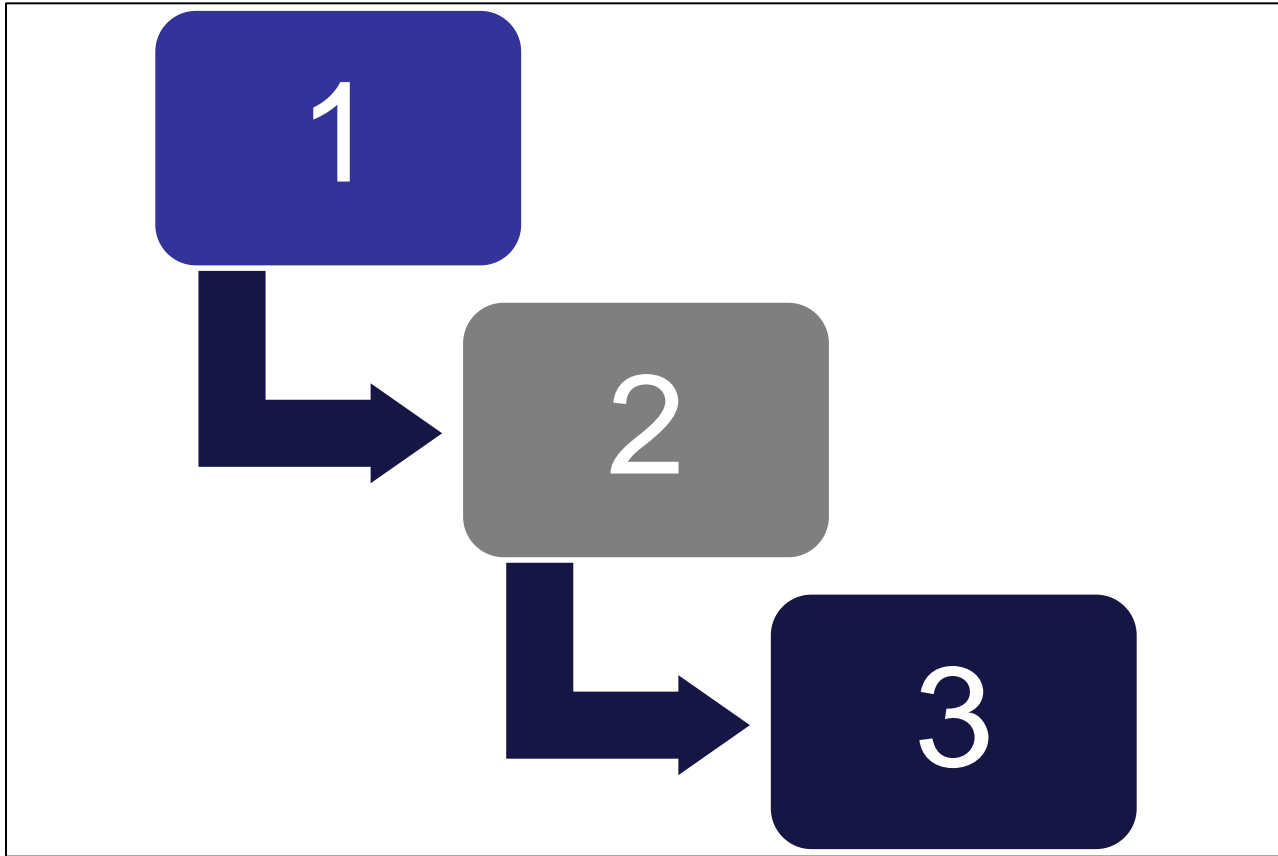
The Permit Process Exercise

Answers are on the Following Page



The Permit Process Answers!

Process Illustrated with 1-2-3



What Does the PIA do Regarding Emergencies

Fire on a Ship in the Dry Dock



Emergency Practices

Evacuation Muster Area Sign on a Fence



PAI Training Best Practices

Trainee Putting Out a Fire



- Fire Watch
- Competent Person
- PAI Duties
- Hot Work

Questions?

Hot Worker Creating Sparks

