

Notable Event Report

Title of Event			
Event Title:	Propane Torch Caught Fire Around Bottle Neck, Requiring Use of Fire Extinguisher		
Date and Time of Occurrence:	05/31/2016	Notable Event Number:	PHY-16-0531
Event Location:	Hall B, Near Entrance	Date Notable Event Report is Due*:	06/30/2016

*The Notable Event Report is due to the ESH&Q Reporting Officer with 30 days of the Initial Fact Finding Meeting unless an extension is requested.

Summary of Event and / or Injuries, including Initial Fact Finding Meeting information: determine the chain of events and timeline. Use attachment as necessary.

On May 31, 2016 around 1:30 an employee was attempting to use a hand held propane torch in Hall B when the neck of the tank caught on fire. After attempting to install one Trigger-Start Torch head, he noticed that it was significantly misshapened, and he discarded that one. He grabbed another one and installed the head. Once installed he partially unscrewed the head and tightened it down again. After lighting the propane torch he noticed that the flame was rather small. He then noticed a flame around the neck of the bottle. After several attempts to extinguish the flame, he put down the propane torch and called for assistance.

An employee walking into the area, grabbed a fire extinguisher from the wall and put out the fire.

Notes:

- During the investigation it was noted that they were using MAPP gas instead of propane gas. The manufacturer's instructions state that you should only use propane gas with this torch.
- This particular hand held self-starter torch has been discontinued.

Causal Analysis: (Use attachment as necessary)

Direct Cause:	A4 Management Problem, B1 Management Methods LTA, C09 Corrective actions for previously identified problem or event was not adequate to prevent reoccurrence. (PHY-14-0228). The lessons learned were entered into the database and the event was shared at several meetings. 1690 emails were sent to applicable personnel expressing the need to follow manufactures guidance before using this device. It appears that over time, the lesson learned was diluted and not applied before the use of this device.
Root Cause:	There was a failure to follow previously identified corrective actions and lesson learned which were to follow manufacturer's guidelines before using the hand held propane torch with Trigger-Start Torch. Specifically the manufacturer's guideline states to attach the torch device and check for leaks with soapy water before igniting the propane torch for use.
Contributing Causes: (List as many as apply.)	A2 Equipment Material Problem, B3 Inspection/testing LTA -The incident investigation determined that the cause of the fire was a worn insertion pin on the torch which allowed propane to leak between the bottle and the torch. The manufacturer's instructions states that after the bottle is attached to the torch "With valve closed, without lighting, test all connections with soapy water. If bubbles appear, gas is leaking and the torch must be repaired or replaced. A5 Communication LTA, B4 Verbal Communication LTA, C01 Communication between work groups LTA: Communication between Hall Coordinator and other qualified personnel was LTA Less than adequate. When the employee asked if there was a hot work permit, there was no dialogue or read back

Causal Analysis: (Use attachment as necessary)

to ensure that the work that was being done matched the permits and the users that are indicated on the permits.

A4 Management Problem, B3 Work Organization and Planning LTA, C11 Inadequate work package preparation. The Hot work Permit procedure was not followed entirely. The hot work permit did exist. However it did not cover open flame work nor did it cover this particular worker. The employee failed to follow Hot work processes and procedures which decreased his preparedness for this type of work.

A3 Human Performance LTA, B1 Skill Based Error, C04 Infrequently performed steps were performed incorrectly. The employee does not typically perform this type of work. The project is behind schedule and manpower from other areas is being used to supplement the workforce.

A3 Human Performance LTA, B1 Skill Based Error, C04 Previous success in use of rule reinforced continued use of rule. Previous experience with this device gave the employee the confidence use the device for the task of softening epoxy.

Extent of Condition Check		JLab CATS Number	Target Date	Action Owner
All Halls will inspect all Propane bottles and torches for damage and discard any suspect bottles and torches and report back to the Division Safety Officer.		NE-2016-		Ed Folts, Bob Sperlazza, Bob May, Paul Collins,
Evidence of completion: List of results from extent of condition				
Does this event involve failed equipment?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Is there similar equipment in other areas?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	** If yes, assign extent of condition check to the appropriate DSO(s).

Corrective Action(s)	JLab CATS Number	Target Date	Action Owner
Share the Lessons learned from this event within the local and DOE Lessons Learned Databases.	NE-2016-12-01	06/30/2016	Tina Johnson/ Mary Jo Bailey
Torches that do not have factory labels for the type of gas to be use will be discard and replaced with ones that do	NE-2016-12-01	09/09/2016	Ed Folts
Evidence of completion: Picture of the items with labels.			
Provide a punchlist of items to do before using a propane torch. This punchlist should be posted on the cabinets where the items are stored within the hall	NE-2016-12-01	09/09/2016	Ed Folts

Notable Event Report

Corrective Action(s)	<u>JLab CATS Number</u>	Target Date	Action Owner
Evidence of completion: Pictures of the cabinets with signs posted			
Conduct meetings in each of the halls to share this event and the expectations for the future handling of such devices.	NE-2016-12-01	09/09/2016	Ed Folts
Evidence of completion: Powerpoint			

Lessons Learned (Confer with Lessons Learned Coordinator) (Use attachment as necessary)	<u>Lessons Learned Number</u>
Although you may be semi familiar with a piece equipment (use it at home from time to time), you should consider investing a few extra minutes into re-familiarizing yourself with that equipment and recommended uses of the equipment before using it.	958

Witness Accounts: (Use attachments as necessary. Box will expand as necessary)

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)

**Hall-B Fire Incident
Fire Protection Narrative
May 31, 2016
Final Version
Tim Minga/Fire Protection**

On May 31, 2016 at 13:33 hours, Calvin Mealer from Hall-B made contact with this office to report a small fire that had just occurred in Hall-B.

At 13:40 hours, this investigator attempted to make contact with Mr. Mealer by cell phone without success.

At 13:45 hours, this investigator did make contact with Doug Tilles to determine the extent of the fire. Mr. Tilles advised a small propane cylinder with torch head attached caught fire while trying to ignite it. The fire was out and both torch and cylinder would be outside the truck access door for examination.

At 13:46 hours, this investigator made contact with (DSO) Ed Folts to advise there was a small fire in Hall-B. Mr. Folts advised he would meet me on scene.

At 14:00 hours, this investigator arrived on scene and meet up with Ed Folts to start a preliminary investigation.

At 14:10 hours, this investigator interviewed Dave Kashy (torch operator) to determine what happened to cause the fire. Mr. Kashy advised he removed a small propane cylinder from the storage bin located on the south wall of Hall-B. He attempted to attach the torch head and realized the head was old and needed replacing. He threw the torch head into the trash can. Mr. Kashy retrieved another torch head and screwed it onto the cylinder. At this time, he attempted to light the torch before using it on a job he had on the second level. Once the torch ignited, flames came out from around the threads of the cylinder. Mr. Kashy then dropped the cylinder on the floor. At this time, Mr. Elliott Smythe entered the hall through the labyrinth entrance and saw the fire. He immediately retrieved a dry chemical extinguisher and extinguished the fire.

At 14:24 hours, this investigator attempted to contact ESH&Q without success.

At 14:30 hours, this investigator spoke with Calvin Mealer concerning his active Hot Work Permit. After reviewing the permit, it was determined the permit was for Tig welding and grinding only, not for propane torch work. I advised all pertinent individuals in Hall-B that in the future to request hot work permits for all types of work that may be needed. Further investigation revealed that Mr. Kasy was not listed on the hot work permit as a hot work operator and did not perform the responsible duties of a hot work operator as listed in ES&H Manual 6900 Appendix T1, Section 3.1. Therefore, he was not authorized to perform hot work in Hall-B.

At 14:35 hours, Mr. Folts and I contacted Jennifer Williams (IH) to determine the most appropriate way to clean up the discharged dry chemical extinguisher agent that was discharged. She advised HEPA vacuum with hooded respirator. Calvin Mealer was tasked with cleaning up the agent.

At 14:40 hours, it was determined that the propane cylinder and torch would be packaged as evidence and stored in the CMSA's flammable locker. See Jennifer Williams for access to this locker. Photographs were taken of the cylinder and torch head for further investigation.

At 14:45 hours, this investigator left the scene.

Further investigation needs to be conducted to determine if the Teflon seal in the cylinder or the cork washer in the torch head were damaged before use. It appeared one of the two failed.

On June 2, 2016 at 15:00 hours, this investigator retrieved the propane cylinder and torch head from storage. I screwed the torch head onto the cylinder until it bottomed out. Sprayed soapy water where the torch meets the cylinder and observed a significant leak. I removed the torch head and examined the Teflon seal and rubber O-ring in the cylinder. The Teflon seal appeared to be intact, although the rubber O-ring showed signs of wear.

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)

On June 3, 2016 at 09:00 hours, to eliminate the cylinder as the cause of the fire, I attached the torch head to a new cylinder and it leaked as well. I spoke with the manufacturer and they advised the torch head in question (Benzomatic TS300) has been discontinued since 2012. We also discussed what could have caused the gas to leak by and cause the fire. Their representative suggested thorough examination of the torch stem for scarring and the possibility of it being bent. This investigator took the stem to our machine shop to determine if the stem was bent or scared. It was determined the stem had a heavy scar which caused the soft brass stem to develop a ridge buildup preventing the stem from sealing with the O-ring in the cylinder. Therefore, this investigator has determined the scared torch stem to be the cause of the fire. It also needs to be mentioned that because of the success of the Combustible Loading Program, the fire was limited to the immediate area on the floor where the cylinder and torch was dropped. The fire did not spread outside the area of origin. See pics provided of scarring of the stem.

Statement from Elliott Smythe



Hall B torch fire

Jun 02

From: Elliott Smythe

To: Tina Johnson

Hi Tina,

On Tuesday May 31, 2016 at approximately 1330 Joshua Tomason and myself was entering Hall B to retrieve a turbo pump and a laptop. Upon entering the hall we notice Dave Kashy yelling for help and a hand held torch was on fire on the floor near the entrance of the hall. Several fire extinguishers were mounted on a board in front of the entrance to the hall. I grab a fire extinguisher and put the fire out.

Elliott Smythe

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)



INSTRUCTION MANUAL

Trigger-Start Torch

Model: TS3000



⚠ DANGER

This torch is used with a flammable product. Failure to comply with these Warnings and Instructions may result in an explosion or fire that may cause property damage, serious personal injury or death.

Read and comply with the instructions and warnings in this manual and familiarize yourself with the torch before lighting and using. Review instructions and warnings periodically to maintain awareness. Do not try to operate before reading instructions.

Torches are to be used with propane only. Use only with Hand Held Propane Cylinders specifically designed for use with torches. (DOT-39 or TC-39M cylinders)

⚠ WARNING

- Materials used in the construction of this device may contain brass (which may contain lead), a chemical known to the State of California to cause birth defects or other reproductive harm.
- Combustion by-products produced when using this device contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.
- Keep torch out of reach of children and anyone who has not read instructions. Do not point torch towards face, other persons or flammable objects. Never attempt to use torch as a cigarette lighter.
- Disconnect cylinder when not in use.
- Never attempt to modify the torch construction and Never use unapproved accessories or fuels.
- Be extra careful when using the torch outdoors on sunny or windy days. Bright sun makes it impossible to see the torch's flame. Wind may carry the torch's heat back towards you or other areas not intended to be heated. Windy conditions may also cause sparks to be blown into other areas with combustible materials.
- Treat the torch as you would any fine tool or instrument. Do not drop, throw, or otherwise abuse.
- Do not use a leaking, damaged or malfunctioning torch.
- Radiant energy can harm your eyes. Wear goggles having ANSI 287.12979 shade lens number appropriate to the torch operation as indicated; brazing and light cutting (3 or 4), medium cutting and light welding (4 or 5), heavy cutting and medium/heavy welding (5-8).
- Never use torch to strip paint.
- Heating a surface may cause heat to be conducted to adjoining surfaces that may be combustible or become pressurized when heated. Always check to make sure no unintended parts or materials are being heated.
- Work only in well-ventilated areas. Avoid the fumes from fluxes, lead-based paint, and all metal heating operations. Be especially careful to avoid fumes from cadmium plating and galvanized metal- remove these coatings in the area to be heated by filing or sanding prior to heating.
- Avoid contact of flux with skin or eyes.
- Always wear safety glasses, protective gloves and use proper tools to handle hot work.
- Be aware that the tip of the torch can get extremely hot during use. Take precautions to protect yourself and others from accidental burns.
- Never use the torch on or near combustibles. Be especially careful around motor vehicles or any gasoline-fired products and beware of hidden fuel lines and tanks.
- Always make certain the torch is placed on a level surface when connected to the fuel cylinder to reduce the risk of accidental tip over. Be sure the torch is not pointed in a direction which could cause nearby objects to ignite when the torch is set down.
- Never leave the torch unattended when lit.
- Never attempt to repair or heat a gasoline tank, a chemical drum an aerosol can, a compressed gas container that held flammable liquid or gas or any other chemical. Heating these is extremely dangerous, especially after they have been "emptied".

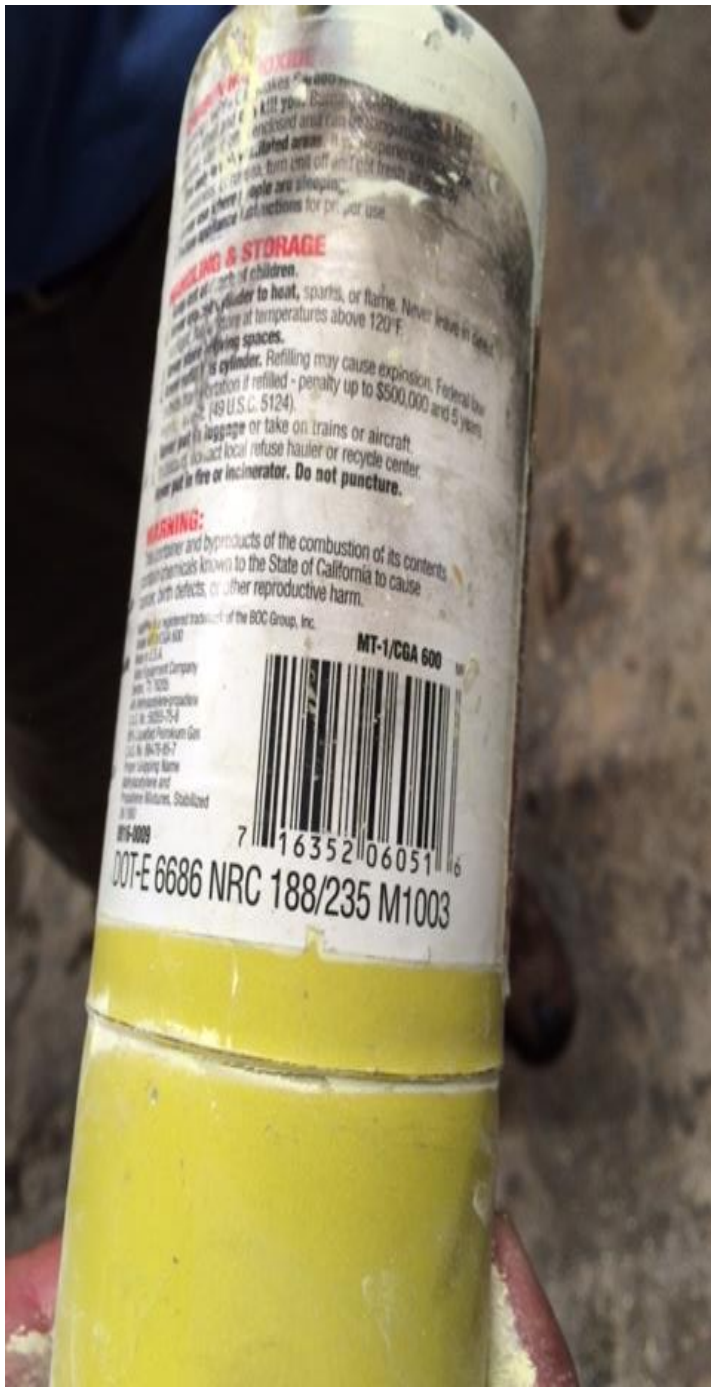
DO NOT DISCARD THESE WARNINGS AND INSTRUCTIONS

200 Old Wilson Bridge Road
Columbus, OH USA 43085
(866) 928-2657
worthingtoncylinders.com | bernzomatic.com

06/24/15







Hot Work Permit Form

(See ESH Manual Chapter 6900 Appendix T1 Hot Work Permit - Instructions)

To be completed by the Supervisor or SOTR (must have current SAF 108 Fire Safety Training):

INTRODUCTION			
Start Date:	05/03/2016	End Date:	05/31/2016
Building:	Hall B	Area:	Space frame
Describe Hot Work to be performed:		Hot Work Operator:	Cell Phone:
Grinding and TIG welding		Josh Foyles/Calvin Mealer	
		Is Fire Watch Required? (if "Yes" list name below)	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
		Fire Watch Name:	Jeff Price/Adam Bradshaw/Todd Ewing/Morgan Cook/
		SAF 108, or equivalent, Date Last Acquired:	JP10/28/15-AB10/28/15-TE2/24/16-MC7/26/16

INSPECTION CHECKLIST		CONSIDERATIONS (If "YES" additional work control documents may be required)	
<input checked="" type="checkbox"/>	Sprinkler and fire alarm system(s) are operational.	<input checked="" type="checkbox"/>	Potentially affected persons notified.
<input checked="" type="checkbox"/>	Hot work equipment to be used is in satisfactory operating condition and in good repair	<input type="checkbox"/>	Does the proposed work involve: Pressurized Systems
<input type="checkbox"/>	All flammable, combustible materials have been relocated at least 35ft (11 m) away from proposed work area or properly protected.	<input checked="" type="checkbox"/>	Workers have proper Personal Protection Equipment.
<input checked="" type="checkbox"/>	Potentially affected hazardous processes have been rendered safe (cryogenics, electrical, gases, etc.)? Note below:	<input type="checkbox"/>	Radioactive Materials
<input type="checkbox"/>		<input checked="" type="checkbox"/>	Area has adequate ventilation.
<input type="checkbox"/>		<input type="checkbox"/>	Hazardous Chemicals
Hazard	Control	FIRE SYSTEM SAFETY	
Flammable within 35'	Fire retardant cloth and a fire watch	Type of fire extinguisher provided:	ABC
		Location of the nearest fire alarm pull station:	By stairs down
		Location of nearest building fire extinguisher:	By stairs down

SPECIAL PRECAUTIONS

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)

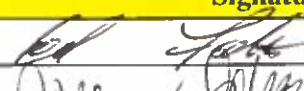
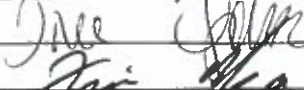
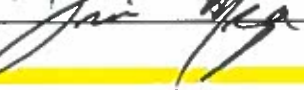


Emergency Notifications Made (Subsequent to the Event):	Date	Time
Fire, Rescue & Emergency Medical: (9-911)		
Guard Post: x5822; 269-5822		
Occupational Medicine 269-7539		
ESH&Q Reporting Officer: 876-1750	05/31/2016	~1400
Crew Chief 630-7050		
Industrial Hygiene: 269-7863:		
Other:	06/01/2016	~1600

Confirmation Review Distribution: Investigation Team Members Affected Division Managers ESH&Q Reporting Officer	It is asked that you review and provide comments to this document to the Lead Investigator (denoted on Page 1) within ___ days. Your comments will be reviewed and incorporated as appropriate. Thank you for your consideration in this matter.
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Investigation Team Confirmation:

The below signees, confirm to the best of their knowledge, that the information presented in this document is accurate and complete.

Role	Print	Signature	Date
Lead Investigator	Ed Folts		7/25/16
ES&H	Tina Johnson		7/29/16
SME	Tim Minga		8/2/16

Acceptance/Acknowledgement of Facts

	Print	Signature	Date:
Associate Director/ Department Manger			08/02/16

Upon confirmation submit document to the [ESH&Q Reporting Officer](#) for completion and distribution.

Documentation of Findings: (To be Completed by ESH&Q Reporting Officer)

Notable Event Number:	PHY-16-0531
CATS Number:	NE-2016 - 12 - 01
Lessons Learned Number:	958
ORPS Number:	N/A
NTS Number:	N/A
CAIRS Entry:	N/A
DOE Cause Code:	A4 Mgmt Problem BI Mgmt Methods LTA, OOLP Previous industry exp. was not used to prevent re-occurrence

<u>DOE Cause Code:</u>	A4 Mgmt. Problem, B1 Mgmt. Methods LTA, C06 Previous Industry Exp. Was not used to prevent re-occurrence.
ISM Code:	Perform Work Within Controls

Unless otherwise specified the following is to be completed by the Lead Investigator.

Step 1 Initial Fact-Finding Meeting (To be held as soon as reasonably possible following event(within 24 hours))			
Date:	06/02/2016	Time:	2:00 pm
		Location:	CC F228
Required Attendees: (Print Name)		Optional Attendees: (Print Name) Present	
Lead Investigator:	Tina Johnson	Associate Director:	Rolf Ent Notified
ESH&Q Representative:	Tina Johnson	TJSO Observer:	Steve Neilson
Supervisor of involved persons(s):		<u>Subject Matter Expert(s)</u>, Facility/Equipment Owner as applicable:	
Involved or impacted person(s):	Dave Kashy	Tim Minga	
Witness(es):	Calvin Mealer Elliott Smythe- Invited		

Agenda (Ensure the pace of the meeting allows time for accurate note taking.)	√ if Complete
1. Introduction – Provide Event Title, Date and Time of Occurrence, and Location:	√
2. Attendance - Are Required Attendees present.	√
3. Purpose of Initial Fact-Finding meeting.	√
4. Event Reconstruction – Use information to complete Section 3. <u>Summary of Event and/or Injuries</u> below.	√
a. Personnel and organizations involved in the event.	√
b. Conditions and actions preceding the event.	√
c. Chronology (timeline) of the event; and	√
d. Immediate actions taken in response to the event.	√
5. Clarify information – <u>Subject-Matter Expert</u> (SME) confirms work conditions.	√
6. <u>Stop Work</u> or the <u>Tag Out</u> Required? If “Yes” – establish the restart criteria and inform the affected Management chain.	N/A
7. Compensatory Actions Required? If “Yes” determine responsibility and include confirmation documentation.	N/A
8. Records or documentation required to confirm, clarify, or complete information (i.e., work plans, work control documents, photos, etc).	√
9. Other Questions or Concerns: Ask attendees if there are any other questions, concerns, or information that they wish to provide.	√
10. Obtain TJSO Observer feedback on conduct of fact finding meeting and potential improvements.	√

Step 2 Investigation Team:		Date Convened:	
(Within 24 hours of Fact Finding Meeting.)		06/06/2016	
Role	Name	Department/Group	Phone
Lead Investigator	Tina Johnson	ESH&Q	7611
DSO	Ed Folts	Physics	7857
SME	Tim Minga	FM&L	7310
TJSO Observer	Steve Neilson- Invited	TJSO	7215

Environmental Aspects	
Type of Material Released:	Quantity:
Source:	Time Flow was Halted or Controlled:
For Investigation Team (✓ All That Apply):	
<input type="checkbox"/> Reportable Quantity	<input type="checkbox"/> Impact Ground/Soil
<input type="checkbox"/> Storm Water Channel/Drain	<input type="checkbox"/> Sanitary Sewer

Categorization and Reporting

(To be completed by ESH&Q Reporting Officer within two hours – unless essential information is still pending)

ORPS Determination:	Date: 06/03/2016	Time: 0921
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06/03

ORPS/NTS Determination: PHY-16-0531 Propane Torch Caught Fire Near Jun 03

Around the Neck, Requiring Use of Fire Extinguisher

From: Tina Johnson

To: Steve Neilson

Cc: Ed Folts, Mary Logue

Steve,

As you know, on [May 31](#), 2016 around 1:30 an employee was attempting to use a hand held propane torch in Hall B when the neck of the tank caught on fire. After attempting to install one self lighting heads, he noticed that it was significantly misshaped, and he discarded that one. He grabbed another one and installed the head. Once installed he partially unscrewed the head and tightened it down again. He attempted to test light the propane torch, and he noticed that the flame was rather small. He then noticed a flame around the neck of the bottle. After several attempts to extinguish the flame, he put down the propane torch and called for assistance.

An employee walking into the area, grabbed a fire extinguisher from the wall and put out the fire.

The Lab has determined that this is not ORPS/NTS reportable at this time and will process this event as a notable event and DOE Lessons Learned.

If you have any questions or concerns about this matter, feel free to contact me.

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Tina Johnson
Reporting Officer/ Staff Administrator I
Jefferson Lab

10 CFR 851 Screen:	Date: 06/03/2016	Time: 0921
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Negative: This event does not meet the voluntary criteria as a discreet programmatic weakness.

Final Distribution:

- [ES&H Reporting Officer](#) (Original)
 Associate Director/Department Manager
- [Division Safety Officer](#)
 Investigation Team Members
- [ESH&Q Liaisons](#)

Form Revision Summary

- Revision 1.6 – 02/22/16** – Updated form to reflect extent of condition ensuring it covers failed equipment per MOA
- Revision 1.5 – 10/04/13** – Changed COE to Lessons Learned; updated links.
- Revision 1.4 – 09/06/12** – Qualifying Periodic Review. Clarification of content only.
- Revision 1.3 – 01/31/12** – Updated ESH&Q Reporting Officer assignment from S.Smith to C.Johnson per M.Logue
 Edited to clarify process steps.
- Revision 1.2 – 10/20/11** – Updated ESH&Q Reporting Officer assignment from J.Kelly to S.Smith per M.Logue.
- Revision 1.1 – 05/24/11** – Edited to clarify process steps.
- Revision 1.0 – 11/23/10** – Updated to reflect current laboratory operations.

ISSUING AUTHORITY	FORM TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	REVIEW DATE	REV.
ESH&Q Division	Tina Johnson	02/22/16	02/22/19	1.6

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