

Arizona State University



Form: Fire Report

Occupancy: [REDACTED]
Occupancy ID: [REDACTED]
Address: [REDACTED]
Tempe AZ 85281

Inspection Type: **7 - Emergency Response.**
Inspection Date: **3/6/2022** By: Esperti, Chris J
Time In: **14:11** Time Out: **16:45**
Authorized Date: **03/11/2022** By: Esperti, Chris J

Inspection Description:

This Inspection Report is for situations associated with a reported Fire. This Report will be issued and reported as part of the Annual Security and Fire Safety Report "Clery Act".

REFERENCES: INTERNATIONAL FIRE CODE (IFC) 2018 EDITION | INTERNATIONAL BUILDING CODE (IBC) 2018 EDITION | NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 2018 EDITIONS.

Inspection Topics:

Emergency Description

Origination of the notification to the University Fire Marshal's Office.

Phone call, email, text, live safe application, etc.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: Chris Esperti received a phone call from the EHS on call phone on 03/06/2022 at 2:11pm.

NOTE - Water flow Alarm was received by the Fire Alarm System at 1:35pm ([REDACTED] FL2 WATERFLOW STAIRWELL [REDACTED]).

Overall General Description of the Emergency / Hazard.

Provide a detailed description of the Emergency / Hazard.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: EHS Associate Director Fire Safety and Prevention (University Fire Marshal) Chris Esperti received a call from the EHS on call phone (Irene Mendoza) on 03/06/2022 at 2:19pm for a Fire reported at the [REDACTED] inside Laboratory Room [REDACTED]. Irene stated that [Laboratory Manager] the Laboratory Manager was called and on their way in to assess. [Laboratory Manager] mentioned to Irene that there was a [REDACTED] source within that Laboratory and that the Fire Fighters should not enter unless extremely necessary. I had arrived on scene at approximately 2:35pm at the Incident Command Post (South side of the [REDACTED] Building) and met with [Unit Facility/Safety Staff], [Laboratory Manager], David Gillum (EHS Assistant Vice President), ASU Police and the Tempe Fire Command. Communication with the Tempe Fire Department was that the Fire Fighters used their thermal imaging camera where they identified no heat in the space, the Automatic Sprinkler System had extinguished the Fire in the Chemical Fume Hood within Laboratory Room [REDACTED]. The water had been shut off, Chemical Fume Hood cabinets underneath with Chemicals stored within was not affected by the Fire within the Fume Hood. The Chemical Fume Hood Sash had been shattered (Glass), the Cabinets next to the Hood were not involved (where the [REDACTED] is stored). Fire Fighters did not have to put water on the fire, the Automatic Sprinkling System extinguished the fire.

Fire Department had zero readings on all of their monitors for radiation, there was a PH balance test on the water that that showed no chemicals.

At this time the operational commitment from the Fire Department had been accomplished. The Tempe Fire Department Fire Investigator accompanied Chris Esperti, David Gillum, [Laboratory Principal Investigator], [Laboratory Manager], [Unit Facility/Safety Staff], [Unit Facilities Staff] into the Laboratory to assess the situation.

Chris Esperti began the Fire Investigation for Arizona State University.

Responding Outside Agencies.

Provide a description of all outside agencies that responded to the scene (e.g. Tempe Fire E246, Mesa Fire 201, ATF, etc.).

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: Tempe Fire and Medical Rescue.

Phoenix Fire Department.

Mesa Fire and Medical Rescue.

Chandler Fire Department.

Scottsdale Fire Department.

ASU Police Case / Report Number.

Information shall be gathered from the Police Officer / Aide on site or by calling ASU Police at 480-965-3456.

Status: GENERAL COMMENTS:

Notes: ASU Police Report: DR2022-00749.

ASU Police Command Staff Notification: CFS 2022-12910.

General Information.

Any general information not described in other categories under Emergency Description.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: FIRE INVESTIGATION:

03/06/2022 - Upon entry into the outer Laboratory () there was standing water throughout this common Laboratory area (See Attachment 1 and 2, from Left to Right). Entry into the Laboratory Room () has two doors that enter into the space, facing the Laboratory the right side was unaffected but had standing water (Chemical Fume Hood still in operation) lighting was still active and ventilation throughout the space. The left side of () was the affected side, the Chemical Fume Hood was showing obvious signs that the fire was contained within the Chemical Fume Hood (Burned Paint and Heat Signatures on the Right exterior and upper Left exterior of the Hood), the glass sash shattered on the ground with an activated Sprinkler Head on the exterior of the Fume Hood (See Attachments 3 - 7 from Left to Right). There were multiple small vials of what was determined to be waste water within that were being dispersed amongst the standing water within the affected Lab and out into the main Lab areas. There were a total of 3 regulators identified within the Fume Hood and what appeared to be 5 pumps, one of the pumps on the lower left side of the Chemical Fume Hood was not entirely melted as were the remaining four. We looked at the unaffected Chemical Fume Hood as a rough example of how the Hood/experiment would have looked normally (See Attachment 8 from Left to Right). By looking at the unaffected Hood and speaking with the [Laboratory Principal Investigator] who accompanied us on the assessment. [Laboratory Principal Investigator] stated that they have glass tubing that within a fibrous material hydrogen gas is flowed through the top and bottom of these tubes within the hood. These tubes are connected with rubber tubing. There are electrical pumps within the hood (total of 5). The remaining shattered glass within the Hood are bottles that contained waste water as part of the experiment. The only flammable materials were the rubber tubing and the plastic components of the pumps. Hydrogen gas was being pumped in from the exterior of the Fume Hood through a stainless steel line (through the lower right side). The connection point of this stainless steel hydrogen line went to a rubber tubing and then into a regulator. The tubing was not present and could be seen to be melted around the existing stainless steel hydrogen tubing. As is mentioned in the interview section below [Unit Facility/Safety Staff] witnessed the smoke through the exterior door of () when the Fire Alarm was activated and secured the main Hydrogen Gas that fed the space. The inspection of the Hood did not show any obvious signs of malicious intent. There was no evidence of any incendiary device utilized to start this fire. There was an additional regulator in a blue bucket with a copper line laying on the ground in front of the affected Fume Hood (See Attachments 3, 4, and 5, from Left to Right). The regulator was identified during the interview with [Laboratory Principal Investigator] (see below) that he had mounted the copper tubing and regulator along the top exterior of the affected Chemical Fume Hood and the regulator hung down as a spare near the cylinders along the wall. The securing mechanism must have melted causing the tubing and the regulator to fall to the ground and into the blue bucket. Tempe Fire and Medical Rescue Fire Fighters were asked and confirmed by the Tempe Fire Investigator that they did not touch or move anything.

03/07/2022 - Re-entered Laboratory Room () with Robert Ott (EHS), Neha Chawla (EHS), [Unit Facility/Safety Staff], [Laboratory Principal Investigator], [Researcher 1], [Laboratory Manager], and [Researcher 2]. Closer investigation of the involved Chemical Fume Hood showed that the sash that had the shattered glass has a rubber gasket at the bottom that had shown signs of melting (flame impingement) on the right side of the Hood. The left side rubber gasket was still intact with not flame impingement (See Attachments 10 and 11, from Left to Right). The left side within the Fume Hood had a cylinder that is identified from previous pictures of the experiment setup and confirmation from [Laboratory Principal Investigator] that this cylinder is Nitric Oxide, cylinder valve by touch appears to be in the closed position. Cylinder has an attached regulator (one of the three identified within the Hood), there is no attached tubing to this regulator as it burned and melted away as part of the fire (See Attachments 9, from Left to Right). The heat signatures were better documented showing the upper right side exterior of the Hood (closest to the activated Sprinkler Head), and the upper left side exterior (See Attachments 12 and 13, from Left to Right).

CAUSE / ORIGIN:

Area of Fire Origin: Technical Areas. Laboratory.

Cause of Ignition: Cause undetermined after investigation.

Physical factors contributing to ignition: Hydrogen Gas within the Chemical Fume Hood with combustible material (rubber tubing, plastic from pumps). Electrical from the pumps and the light with the Chemical Fume Hood. Misuse of materials or products not able to be classified further.

Human factors contributing to ignition: Personnel performing experiment where performing processes and left the room, unable to determine what was done as part of the experiment and what was had happened after the workers has left the space. Human factors contributing to ignition undetermined or not reported.

Mechanical Failure of Malfunction: Mechanical failure or malfunction not able to be classified further.

Electrical Failure or Malfunction: Electrical failure or malfunction not able to be classified further.

Operational Deficiency: Operational deficiencies not able to be classified further.

Extent of Flame or Smoke Spread: Confined to the room of origin.

Avenue of Smoke Travel: Doorway, passageway. Included are normal openings between rooms.

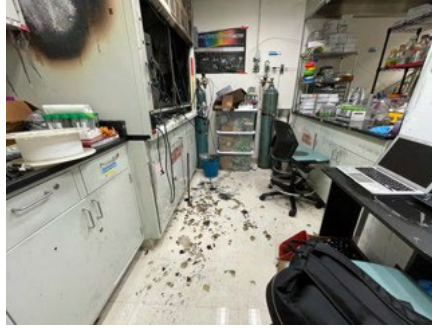
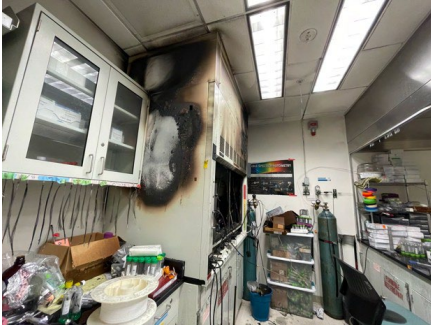
Extent of Fire Involvement: Smoke only showing.

Other Investigative Factors: Other investigative factors undetermined or not reported.

EQUIPMENT IDENTIFICATION:

Equipment Involved: Shop Tools or Industrial Equipment - Pump. Excluded are pumps integrated with other types of equipment.

Equipment Power Source: Gaseous Fuels - Natural gas or other lighter-than-air gas. Included is hydrogen.





Exterior of Building

Visible Smoke or Fire from the exterior of the Building / Property.

Provide an explanation of the scene related to smoke and or fire.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: Unconfirmed report that there was Black Smoke seen from the exhaust of the [REDACTED] Buildings.

Exterior Ingress / Egress is clear and unobstructed.

International Fire Code 2012 (IFC 2012), SECTION 1030 MAINTENANCE OF THE MEANS OF EGRESS. 1030.2 Reliability. 1030.3 Obstructions. 1030.6 Finishes, furnishings and decorations.

Status: YES:

Notes:

Are the Occupants in a safe Assembly Area.

Describe the location of the majority of the Building Occupants.

Status: YES:

Notes: All Building Occupants were evacuated from the building due to the Fire Alarm Activation.

Fire Alarm System - IFC 2018 Edition, Chapter 9; NFPA 72, 2018 Edition

Has ASU Police received notification of the Fire Alarm Activation.

ASU Police - 480-965-3456.

Status: YES:

Notes: Fireworks Event Information:

Alarm: Waterflow Activate

Sunday, March 06, 2022 1:35:25 PM

Desc: [REDACTED] FL2 WATERFLOW STAIRWELL [REDACTED]

Device: [REDACTED] _L2_WF_129 (01-007-01030129) No Extended Message

TSA/Icon Label: [REDACTED] PANEL1 : [REDACTED] TSA/Icon Desc: [REDACTED] PANEL1 : [REDACTED]

Map: [REDACTED] PANEL [REDACTED]

Desc: [REDACTED] PANEL [REDACTED]

ASU TEMPE CAMPUS

Do not reply to this e-mail. This message is generated from an automated source. Incoming e-mail to this account is not monitored and will be automatically removed.

General Information.

Any general information not described in other categories under Fire Alarm System.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: Fire Alarm System was reset and placed back in operation by ASU FSST Department - Brian Wabby on 03/06/2022 at 7:07pm.

Automatic Sprinkler System is active.

Provide a description of the area affected, number of heads active, etc.

Status: YES:

Notes: Sprinkler Head outside of the Fume Hood inside of Laboratory Room [REDACTED] was activated from Fire effects. NOTE - Upon entry of Laboratory Room [REDACTED] the Fume Hood on the Left is the affected Fume Hood with Sprinkler Activation.



Replacement Sprinkler Heads Installation.

Describe if they have been installed, who will be performing the installation, and if they spare sprinklers have been restocked.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: ASU FSST Department (Dale Munday) contacted Arizona Verde Fire Protection along with ASU FSST (Brian Wabby). Arizona Verde replaced the affected sprinkler system and placed the Automatic Sprinkler System back in operation on 03/06/2022 at 7:07pm.

Laboratory Related

Chemical Spill / Emergency.

Provide a description related to the Chemical Spill / Emergency. Chemical name, properties, area, etc.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: There were no chemicals identified with Lab Room [REDACTED] that were involved in the standing water and or affected area other than what is mentioned in the above description.

General / Miscellaneous Comments

General Comments.

Any general comments not related to the above fields in this Fire Inspection Report.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes: INTERVIEWS:

[Laboratory Principal Investigator] - 03/06/2022 was interviewed by Chris Esperti on scene, PI arrived as the group was starting to assess the situation. [Laboratory Principal Investigator] provided information about the small glass vials and stated they were waste water and posed no hazard. PI mentioned the regulator in the blue bucket should not have been there and asked if [Researcher 1] and or [Researcher 2] had put it there. Later during the interview [Laboratory Principal Investigator] figured out that this copper line they had hung at the top exterior of the affected Chemical Fume Hood and wrapped around with the regulator near the secured cylinders as a spare regulator.

[Researcher 1] - 03/06/2022 was interviewed by Chris Esperti on scene, [Researcher 1] arrived as the group was starting to assess the situation. [Researcher 1] stated that they were in Laboratory [REDACTED] for about an hour the procedures they were doing within the affected Chemical Fume Hood were that they know that they closed off the hydrogen lines (they checked the lines twice). They then left the Laboratory to go downstairs to wash the reactors, this was at approximately 1:00pm. They then heard the Fire Alarm going off and she evacuated the Building. 03/07/2022 at approximately 2:15pm - Stated there was a visiting scholar (name determined to be [Visiting Scholar]) in the Laboratory with them and [Researcher 2] for a walk through of Laboratory Room [REDACTED] video from the security system shows all three ([Researcher 2], [Researcher 1], and [Visiting Scholar]) together entering the building (See Attachment 1). [Researcher 2] had left [REDACTED] first to go back to their office and [Researcher 1] / [Visiting Scholar] left and went downstairs where they showed [Visiting Scholar] how they cleaned the reactors.

[Researcher 2] - 03/06/2022 [Researcher 2] stated that they had left Laboratory [REDACTED] at approximately 12:00pm to go back to their office. 03/07/2022

[Unit Facility/Safety Staff] - 03/07/2022 Upon activation of the Fire Alarm Alarm System [Unit Facility/Safety Staff] was working in the building and heard the alarm and went to verify the Lower Level Fire Alarm Panel and then went to the exterior Lab area where ASU Police had met with [Unit Facility/Safety Staff]. They entered the exterior Lab and when they approached Laboratory [REDACTED] the room was filled with a thick white smoke and could not make out anything from the window of the door leading into [REDACTED]. [Unit Facility/Safety Staff] turned off the main Hydrogen Gas which is housed within a Cabinet just outside of [REDACTED] in the [REDACTED] Laboratory area, ASU Police Officer and [Unit Facility/Safety Staff] left the building awaiting the Fire Department response.

[Researcher 3] - 03/08/2022 [Researcher 3] entered Laboratory [REDACTED] at approximately 12:00pm they were inside the Lab for approximately 15 minutes where they were working on the unaffected Chemical Fume Hood within Lab [REDACTED]. They were performing a Serum bottle test in the glove box. They mentioned there were two people within the Laboratory but could not identify if they were male or female. [Researcher 3] left at approximately 12:15pm. They were on the First Floor when the Fire Alarm sounded and they gathered their belongings and evacuated the Building. They did not see anything out of the ordinary in their time within Laboratory [REDACTED] from approximately 12:00pm - 12:15pm.



Miscellaneous Comments.

Any miscellaneous comments not covered in an above field in this Fire Inspection Report.

Status: EHS FIRE SAFETY AND PREVENTION COMMENT:

Notes:

SECURITY LOG ENTRY:

Security / Door logs provided show that [Researcher 1] last entered the outer Laboratory () on 03/06/2022 at 12:11:39pm (Device:) and entered the First Floor Laboratory () on 03/06/2022 at 1:06:42pm (Device:). Entry into an Elevator at 1:28:56pm. Entry into Lower Level Room on 03/06/2022 at 1:29:28pm (Device:). NOTE - Last entry into the area of Lab was 12:11pm and [Researcher 1] entered Room at 1:29pm (Waterflow Alarm was received at 1:35pm).

Security / Door logs provided show that [Researcher 2] last entered the outer Laboratory () on 03/06/2022 at 12:56:14pm (Device:) and enter the First Floor Laboratory () on 03/06/2022 at 1:28:05pm (Device:). NOTE - Last entry into the area of Lab was 12:56pm and [Researcher 2] entered Room at 1:28pm (Waterflow Alarm was received at 1:35pm).

Security / Door logs provided show that [Researcher 3] last entered the outer Laboratory () on 03/06/2022 at 12:30:18pm (Device:) and enter the First Floor Laboratory () on 03/06/2022 at 12:31:59pm (Device:). NOTE - Last entry into the area of Lab was 12:30pm and [Researcher 3] entered Room at 12:31pm (Waterflow Alarm was received at 1:35pm).

All Security Entry Logs received are uploaded in the Emergency Reporting Database as Supplement Information.

Additional Time Spent on Inspection:

Category	Start Date / Time	End Date / Time
Administrative	3/7/2022 10:00:00 AM	3/7/2022 11:00:00 AM
Notes: Requested the official Run Reports from ASU Police and Tempe Fire and Medical Rescue. Started the written Investigation Report from the Physical Inspection notes.		
Continuation of Inspection	3/7/2022 1:15:00 PM	3/7/2022 1:45:00 PM
Notes: Started the travel from the Tempe Campus (150) University Services Building to the () Building A. Continued the Investigation of the Fume Hood Fire and Interviews.		
Administrative	3/8/2022 10:00:00 AM	3/8/2022 1:15:00 PM
Notes: Continued the written Investigation Report from the Physical Inspection notes.		
Administrative	3/10/2022 2:30:00 PM	3/10/2022 3:45:00 PM
Notes: Continued to write the Inspection Report from the Physical Investigation notes. Added the cause / origin information as well as the door entry notes.		
Administrative	3/11/2022 9:00:00 AM	3/11/2022 10:00:00 AM
Notes: Finalized the written Investigation Report based on notes from Physical Inspection.		

Total Additional Time: 420 minutes

Inspection Time: 154 minutes

Total Time: 574 minutes

Summary:

Overall Result: Open Inspection (Fire and Life Safety Inspection)

Inspection was completed, but there are open violations that have not been corrected.

Inspector Notes:

Inspector:

Name: Esperti, Chris J
Rank: University Fire Marshal
Email(s): asufire@asu.edu, cesperti@asu.edu

Chris Esperti

Digitally signed by Chris Esperti
Date: 2022.03.11 10:22:07 -07'00'

Signature

Date