AOE DEPARTMENT SAFETY REVIEW FORM FOR
EXPERIMENTAL WORKSPACES

Before experimental activities can begin in any room in the Department of Aerospace and Ocean Engineering, and **at least once per year** thereafter, a copy of this form must be completed, signed and submitted by the responsible faculty/staff member (usually the principal investigator). Completed forms should be submitted to the AOE Assistant Department Head for Facilities (Michael Philen) and should also be made available to other faculty/staff with relevant expertise, or with direct involvement in the space. Any advice resulting from this interaction should be copied to the Assistant Department Head, as well as being transmitted back to the responsible faculty/staff member. Once the responsible faculty/staff member is satisfied that all safety concerns have been met the final version of the form should be signed and submitted and a copy prominently displayed on the door to the space and on the department safety website. The responsible faculty/staff member may then authorize experimental activities.

Date of form 8/29/2023..... Form expires (no more than 1 year after form date): 8/15/2023.....

Name and location of workspace Corporate Research Center Research Building 2 suite 101.....

Faculty/staff member responsible for Experimental Workspace and its safety Todd Lowe .....

Office Address 660A McBryde ..... Phone 540.231.7650 Email kelowe@vt.edu.....

GENERAL SAFETY REVIEW

1. The workspace houses the following potentially hazardous experimental rigs. An 'Experimental Rig Safety Form' has been completed, posted, and is current for each of these.

- *Small Boundary Layer Wind Tunnel*
- *Class IV laser capabilities*

2. An evaluation of the above experimental workspace has been performed and the following safety risks have been identified, in addition to those associated with the above facilities (append details where necessary)

•Risk of injury (corneal or retinal burns, cataract formation, damage to the retina or optical nerve resulting in limited ortotal blindness) to the eyes from exposure to the primary beam, specular reflections or diffuse reflections
•Risk of injury (photosensitive reactions, burns, or excessive dryness of the skin) from exposure to the primary beam,specular reflections or diffuse reflections
•Risk of electrical shock (can result in death) from the laser and associated electrical equipment due to the high level ofvoltage
•Risk of fire from laser beam incident on flammable solvents, gases, or combustible materials
•Risk of injury from explosion (shattering) of the laser target and elements in the optical train
•Risk of rupture of compressed air lines and tanks
•Risk of overexposure to inhaled aerosols

3. The following actions have been taken to minimize those risks (append details where necessary)

•Portable laser curtains are available to enclose laser work areas and contain all laser beams.
•Laser safety signs posted on entrances
•Impact-tolerant laser safety goggles available outside of the enclosed area
•Room ventilation
•All users have been assigned several required training courses

4. All users of this workspace have been registered and are listed on the EHS training website at https://secure.hosting.vt.edu/www.ehss.vt.edu/training/training_report.php. Users have taken all appropriate safety training courses from Environmental Health and Safety. Their training is current and is recorded on the EHS website, under the workspace name ..... The appropriate safety courses are (list here):

○Electrical Awareness
○Lockout/Tagout Awareness
○HAZCOM RTK
○Portable Fire Extinguishers
○Personal Protective Equipment Awareness
○Laser Safety

HAZARD COMMUNICATION PLAN

1. A Chemical Hygiene Plan (CHP) is required for this work space. (The responsible faculty/staff member is required to contact EHS to make this determination before answering this question)
No ☒. Continue to step 2
Yes ☐. Sign below to certify that a current and complete Chemical Hygiene Plan has been completed for this space. Provide the location of the CHP in the workspace .....

2. In signing below I am acknowledging that I am responsible for managing the Hazard Communication Plan for this workspace, specifically, it is my responsibility to ensure:

- *a) that all workspace users (include students, staff, other faculty) understand and follow this plan through Scheduled HazCom training, all necessary EHS training, and disciplinary action.*
- *b) that a hazardous chemical inventory is compiled and maintained, using the EHS Chemical Registration System at https://secure.hosting.vt.edu/www.ehss.vt.edu/programs/ChemInventory/inventory_entry.php. A list of hazardous chemicals, downloaded from that site, is appended to the paper copy of this form to be posted on the door to the space. Note that consumer products intended for household use, and used in a manner consistent with that intent need not be listed.*
- *c) that all containers of classified hazardous chemicals associated with or stored in the workspace are clearly and prominently labeled, in English, with the original manufacturers label. If that label is not available then a label based on information from the Safety Data Sheet (product name, danger/warning indication, pictogram…) that clearly communicates the hazard to the user will be used.*
- *d) that procedures are reviewed at least annually, on or about the expiration/renewal date of this form.*
- *e) that Safety Data Sheets (SDS) are available for all chemicals in the attached list are available to lab users at (give location) .....*
- *f) that EHS has been consulted on all other training requirements, and these training requirements have been met and are properly recorded on the EHS training website.*
- *g) that meetings to communicate health hazards associated with the use of all hazardous chemicals and the use of proper PPE will be held*
  - *with all new workspace users before they begin work,*
  - *with all workspace users when a new chemical or other hazard is added to the workspace (and at least annually)*
- *h) that all HazCom information and training of employees will at a minimum meet the requirements of OSHA 29 CFR 1910.1200(h), see below .*

Signature of faculty/staff member responsible for workspace and its safety ..... Date 8/29/2023

LIST OF HAZARDOUS CHEMICALS

No chemicals that fall under the registration categories. Here are our chemicals:

Concept Smoke Fluid (water/glycol) 1L
iFog Fluid (water/glycol) 1L
Sebacate (DEHS) 1L
Mineral oil 5 gallons

1910.1200(h)

Employee information and training.

1910.1200(h)(1)

Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.

1910.1200(h)(2)

Information. Employees shall be informed of:

1910.1200(h)(2)(i)

The requirements of this section;

1910.1200(h)(2)(ii)

Any operations in their work area where hazardous chemicals are present; and,

1910.1200(h)(2)(iii)

The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and safety data sheets required by this section.

1910.1200(h)(3)

Training. Employee training shall include at least:

1910.1200(h)(3)(i)

Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

1910.1200(h)(3)(ii)

The physical, health, simple asphyxiation, combustible dust, and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area;

1910.1200(h)(3)(iii)

The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and,

1910.1200(h)(3)(iv)

The details of the hazard communication program developed by the employer, including an explanation of the labels received on shipped containers and the workplace labeling system used by their employer; the safety data sheet, including the order of information and how employees can obtain and use the appropriate hazard information.