

Environmental Health and Safety Requirements for Startup of New Facilities

This is a brief summary of key steps to be followed for the occupancy of renovated spaces or new buildings. . Additional information is available on the Environmental Health and Safety Center home page at <http://www2.ncsu.edu/ehs/www99/index.html> and <http://www.ncsu.edu/facilities/> for the Facilities Operations home page.

Parties responsible for conformance with these requirements include:

- Facilities Planning and Design
- Construction Management
- Department Heads and Principal Investigators
- Environmental Health and Safety

Building design is developed, reviewed, and completed according to the NC State University Guidelines for Construction and other applicable codes. In addition to appropriate reviews, as a minimum, the coordinating NC State University Facilities Planning and Design project manager shall assure that the designer has addressed the applicable safety requirements (listed in the Safety and Health Design Guidelines for New Buildings section of the Guidelines for Construction) in the design and construction documents.

When tenants are identified at the conceptual design stage, Facilities Planning and Design should furnish them a copy of the checklist (Attachment 1). The key feature to this agreement is that initial room occupation is not permitted unless the basic life safety requirements listed in Attachment 1, Step 1 are met. This should be a condition of the lease for University or non-university tenants (e.g. future occupants agree to comply with requirements of Attachment 1, Steps 1-3 as a condition of occupancy and use of their lab). At the earliest time the processes and equipment used in the new building or work area are known, hopefully at the programming phase of the project , EH&S should be consulted to identify those processes and equipment which require a hazard review prior to startup. It is in everyone's best interest to have hazard reviews planned in advance.

Step 1 - Building / Lab Occupancy Checklist

When construction is completed, approval for occupancy or Beneficial Occupancy is obtained from the NC Department of Insurance and Office of State Construction. . No people / materials / equipment may be moved into this space until written permission is given by NC State Construction Management, who assure that building related features of the Building / Lab Occupancy Checklist (Step 1) are in place. Completion of these items permits occupancy of the lab, **but does not permit the startup of hazardous equipment or the transfer of hazardous materials to the lab.**

Step 2 - Hazardous Materials Move-in Checklist

This checklist is completed by the lab or area manager / principal investigator. When all items are satisfied, appropriate chemicals and gases can be moved into the work area. **Use of hazardous chemical or equipment is not yet permitted.**

Step 3 - Hazardous Operations Startup Checklist

This checklist is completed and signed. As explained in the Hazard Review section of the NC State University Health and Safety Manual, new or relocated hazardous processes or equipment require a hazard review and electrical inspection prior to startup.

EH&S will retain the completed form

Attachment 1

**Environmental Health and Safety Requirements for
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Building	Laboratory	Principal Investigator

Step 1 - Building / Lab Occupancy Checklist

Occupancy or Beneficial Occupancy Approved	*CM
Emergency systems (sprinkler, smoke alarms, gas alarms, etc) all functional from lab to Public Safety	*FP
HVAC System - completed and operational	CM
Emergency contact info (PI name and phone) posted and Safety Plan submitted to EH&S* if applicable	*PI
Emergency evacuation routes from the building are clear and signs are posted	CM

Comments

Both Signatures Required for Occupancy

Signature of NC State Construction Manager: _____ Date: _____
Signature of Principal Investigator: _____ Date: _____

- *CM = NC State University Construction Management
- *FP = NC State University Fire Protection Officer
- *PI = Lab Principal Investigator
- *EH&S = NC State Environmental Health and Safety

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Step 2 - Hazardous Materials Move-in Checklist *

Aisle clearances all appropriate after lab equipment move-in (36 inch minimum aisle present throughout area)	EH&S
Safety plan is completed and approved	EH&S
Ventilation systems (exhaust and HVAC) have balancing completed, balance sheets received, with properly calibrated and operational ventilation alarm devices	CM
Fume Hoods / Biological Safety Cabinets / are certified for use	EH&S

All Signatures Required for Occupancy

Signature of NC State Construction Manager: _____ Date: _____
Signature of Principal Investigator: _____ Date: _____
Signature of EH&S Center Rep: _____ Date: _____

*** Contact the NC State University Radiation Protection Division (515-2894) if radioactive materials or radiation-producing devices will be used in this area**

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Step 3 - Hazardous Operations Startup Checklist

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|---|------------|
| All items from applicable hazard reviews are resolved | PI / EH&S |
| All applicable employee / student training has been conducted | PI |
| All applicable training of facilities operations personnel of building and lab systems they would be expected to maintain (alarms, control systems, etc) has been conducted | CM |
| All equipment interlocks have been tested and are operational | PI |
| Equipment using hazardous chemicals or gases have been tested with low hazard materials (baths filled with water, aspiration systems tested, inert gases used for hazardous gas equipment) with all systems found to be functional - no leakage, etc. | PI |
| Appropriate equipment/electrical inspections have been performed | EH&S
PI |
| Key work practices and procedures are understood (chemical/ gas receiving, transport, disposal, gas cylinder changes, equipment troubleshooting and maintenance) | PI |

Comments (list hazardous processes or equipment approved for startup)

All Signatures Required for Approval

Signature of NC State Construction Manager _____	Date: _____
Signature of Principal Investigator: _____	Date: _____
Signature of EH&S Center Rep: _____	Date: _____