I. **Purpose:**
The operation of cranes on the campus of Dartmouth College create a unique set of hazards that must be effectively managed. This document specifies the requirements for crane operations at Dartmouth College.

II. **Scope:**
This SOP applies to mobile cranes being operated at Dartmouth College. This SOP applies regardless of the entity using the crane, the contractual arrangement governing the job or any other arrangement specific to crane operations on the campus of Dartmouth College.

This SOP does not apply to gantry cranes, overhead bridge cranes or other “fixed” cranes on campus.

This SOP does not apply to the use of boom trucks to lift material into buildings.

This SOP does not apply to earth moving or other excavation type equipment used to lift items into position.

III. **Regulatory Background:**
OSHA Regulation 29CFR1926 Subpart CC: “Cranes and Derricks in Construction” and ASME 30.5-2011 “Mobile & Locomotive Cranes are used as references in the creation of this SOP.

IV. **Authorization:**
All crane use on campus must be authorized by one of the following: Project Managers within the office of “Planning Design and Construction”, FO&M Project Managers or FO&M Engineering Staff.

The Environmental Health & Safety Office and Risk & Internal Controls must be notified of any crane being brought onto campus as soon as it is determined that a crane is being used. EHS: 646-1762  Risk & Internal Controls: 646-2441

V. **Roles and Responsibilities:**
Project managers are responsible to ensure that the contractor being used for a job involving crane operation comply with the administrative and operational requirements of this SOP.

EHS is responsible to review site control plans and critical lift plans where required.

Risk and Internal Controls is available to address questions related to the Certificate of Insurance provided by the crane operator and rigging companies as proscribed in VII.2 below.
The general contractor is responsible to ensure that all operations involving cranes follow OSHA, ASME and Dartmouth College requirements.

VI. Assessment:
A pre lift assessment must be conducted prior to the commencement of any crane operations at Dartmouth College. Critical considerations include:

- Administrative controls are being followed to include verifying the insurance requirements as set forth by the Office of Risk & Internal Controls.
- Site Control Plan describing of how the general public (people not involved with the operation of the crane) will be prevented from entering the crane’s area of operations.
- Verification that crane operators and signal persons are properly certified and that all riggers are properly qualified.
- A final lift hazard assessment is conducted immediately prior to commencing the lift.
- A post lift evaluation to evaluate the overall success of the lift in terms of safety.

VII. Special Considerations:
Any lift that exceeds 75% of the calculated load capacity of the crane shall be deemed a “Critical Lift”.

- If 75% of the calculated load capacity is reached, the crane operator, general contractor and a representative from Dartmouth College shall consider using a higher capacity crane.
- A lift in excess of 75% of the crane’s calculated load capacity shall never travel over an occupied building or area. Prior to commencing a lift on excess of 75% of the crane’s rated load capacity, the occupied area must be vacated. If the area cannot be vacated, then a larger crane must be used.
- If it is determined that the lift can be safely performed in excess of 75% of the calculated load capacity, a representative from Dartmouth College EHS must review and authorize the lift. This is regardless of the job at Dartmouth College.
- At no time will 100% of the calculated load capacity be exceeded.

Special consideration and a critical lift assessment should be made for lifts that are valued over 2 million dollars or lifts with equipment that may take more than three months to replace.

Every effort shall be made never to lift over an occupied building or other occupied area. At no time will a lift occur over an unprotected occupied area. An area is considered occupied if there are people in the area or the general public has the potential to enter the area. For example, a protected walkway to allow access to a building through the construction zone is considered occupied even if no people are in the space. It can be considered unoccupied if access is physically prevented by a fixed barrier.
Process:

The following items are the steps to be followed prior to contracting with or having a crane perform work at Dartmouth College:

1. Notification of a crane coming onto campus should be sent to both Risk Management and EHS via email. All available relevant project information should be provided. (The purpose of notification is so that Risk Management and EHS can provide ongoing assistance with the requirements for crane operations in campus).

2. The project manager obtains a Certificate of Insurance from the crane operator and the rigging company. The following language must be included:
   - The Trustees of Dartmouth College MUST be added as an “Additional Named Insured”.
   - Certificates indicating “Additional Insured by written contract” are NOT permitted.
   - Certificate Holder: Trustees of Dartmouth College
     53 Main Street
     Hanover, NH 03755
   - General Liability Insurance Required is $5,000,000.

3. A written site control plan is developed by either the rigging company, crane operator, general contractor or project manager and submitted to EHS for review.

4. A written lift plan for the highest rated load capacity lift for the crane make and model being used on the job is developed and submitted to EHS for review prior to the crane coming to campus.

5. Once on campus, the project manager or general contractor will visually verify the crane operator’s certification, the signal person’s certification and the rigging person’s qualifications prior to work commencing.

6. Access to the site shall be “controlled” from the time the crane arrives to the time the crane leaves the site. The project manager or general contractor is responsible for ensuring that the site is controlled at all times.
Certifications:
There are two certifications required for crane operations; 1) a crane operator certification and 2) a signal person certification. Riggers are qualified by their employer based upon knowledge, skill and experience.

Operator Certification:
OSHA requires that crane operators be certified. This can be accomplished in several ways, however, virtually all certifications are provided by a third party agency such as the National Commission for the Certification of Crane Operators (NCCO) or the Crane Institute Certification (CIC).

OSHA does consider operating licenses from states as evidence of certification. New Hampshire does not require equipment operators to be licensed, as a result there is no NH Crane Operators license. Massachusetts does require operators to be licensed.

Evidence of certification will be in the form of a formal document with the operator’s name and certifying agency. State licenses may have be in the form of a photo identification card. Photo copies of such certification should be obtained prior to the crane coming to campus.

Signal Person Certification:
Signal persons can be certified by a third party certifying agency such as the NCCO or the CIC. Signal persons can also be certified by their employer through a process specified by OSHA. However, employer certification is nontransferable to other employers.

Evidence of certification will be in the form of a training certificate or wallet size training card with the name and date of the certifying agency on the certificate. Photo copies of the signal person’s certification should be obtained prior to the work commencing.

Rigger Qualifications:
Rigger qualification and training is usually included in the signal person training program. There are both third party training programs and employer training programs. Although formal certification for rigging is not mandated, employers must qualify riggers through knowledge, skill and experience.

Rigging qualification should be documented by the employer. The documentation is usually in the form of a certificate of training. This documentation should be obtained prior to the work commencing.

SAMPLE OF TYPICAL CERTIFICATION DOCUMENTATION