

Fixed Ladder Extent of Condition (EOC)

1. Basic Information:

- All fixed ladders at BNL will be evaluated prior to use utilizing the attached OSHA-based checklist.
- Ed Murphy, F&O Chief Engineer, will coordinate evaluations.
- Staff performing evaluations will receive training (currently scheduled for 7/20/2012) on the use of the checklist.
 - Evaluators will be Facility Complex Engineers (FCE's), Facility Project Managers (FPM's), Environment, Safety, and Health (ESH) support staff, and Research Operations Coordination and Oversight (ROCO) technical staff.
 - Evaluators will be required to have completed Ladder Safety training and received OMC clearance for the work being performed.
 - Ladders will be evaluated by two-person teams to ensure evaluators' safety and optimal peer review.
 - Subject Matter Expert (SME) (S. Kane, M. Gaffney) support will be available.
 - Minimum tool kit recommendation: caliper, protractor, tape measure (3/4 inch width).
- Ladder evaluation data will be captured in a database for tracking and corrective actions.
- Evaluations will determine whether:
 - Ladder is OSHA compliant and remains in service, indicated by a **green** stripe painted at access levels (e.g., top and bottom access points at eye level*).
 - Ladder has manageable deficiencies, indicated by a **yellow** stripe painted at access levels*, and a **yellow** Caution tag. The risk can be mitigated to an acceptable level by use of Work Planning and other administrative controls. Ladder may continue to be used under additional controls pending repair or replacement.
 - Ladder has significant deficiencies, indicated by a **red** stripe painted at access levels*. Ladder will be tagged out of service pending repair or replacement.
 - Only on ladders that are determined to be structurally sound, if access is required before repairs or replacement can be performed to an out of service ladder, it will be permitted to develop a specific fall protection plan to control the ladder hazard to an acceptable risk, provided the following items are acceptably addressed:
 - Incorporation of an ANSI Z359 compliant fall prevention/arrest system, installed under the supervision of a Fall Protection Qualified Person (TQ-FALLPROTECT-Q). Ladder climbing safety systems will be the preferred alternative, however if the configuration make them not practical, other systems such as fall arrest systems can be considered.
 - Documentation of an approved fall protection plan submitted by a Fall Protection Competent Person (TQ-FALLPROTECT-C) that allows only staff trained in Fall Protection (GE-FALLPROTECT) or equivalent, using ANSI Z359 compliant components (i.e., harness, lanyard, connector, etc.) to use the ladder and fall protection system.

***Note:** Some ladders have multiple access points, and may be readily accessible via rooftop and ground levels. These ladders will require marking at multiple levels, per the evaluators' judgment.

2. Prioritization Levels

Ladders will be evaluated according to the following priorities:

- Priority 1- Ladders to be used for scheduled work
- Priority 2- Ladders greater than 4 feet
- Priority 3- Ladders less than 4 feet

3. Time Line

July 13 – Review EOC implementation with Directorate Chief Operating Officers (DCOO). To be covered:

- Consistent approach for the laboratory
- Evaluation support from the Line Organizations
- Critical criteria

July 16 – Review EOC strategy/criteria with Brookhaven Site Office (BHSO).

Week of July 16th – Conduct fixed ladder EOC training workshop.

4. Teams:

Team Lead: Ed Murphy, Chief Engineer F&O

Facility Complex Engineers: C. Bruno

J. Feeney

B. McCaffrey

J. Levesque

A. Nunez

ESH: M. Gaffney

S. Kane

K. Klaus

Environment, Safety and Health Reps. (ESHRs)

Facility Project Managers: TBD

Line Orgs: Photon Sciences: R. Kiss, T. Mendez

PHENIX: D. Lynch

SMD: W. Czekaj

ATF: K. Kusche

PO: S. Marino (back-up: M. Zarcone)

GARS: L. Gerlach, R. Doty

ELS: R. Sautkulis, S. Scalafani, B. Colichio

5. Criteria for Acceptability:

- **Compliant Ladder/Acceptable for Use**
 - o Ladders found to be in full compliance will be noted on the F&O Key Plan. Green stripes will be painted at eye level of all access points to indicate the ladder is acceptable for use.
- **Non-Compliance-Basic/Caution:**
 - o Ladders with compliance gaps will be noted in the F&O Key Plan, and have a yellow stripe painted at eye level of all access points. A yellow Caution tag will also be applied at eye level on the right side of the ladder indicating what compliance gap(s) are present. A Point of Contact will be required on the tag. Yellow tagged ladders will require specific mitigation controls for use, pending repair or replacement (see Work Planning Section below).
- **Non-Compliance-Red/Out of Service:**
 - o If a ladder is found to have any deficiencies listed on the checklist in red, the ladder will be tagged **Out of Service** until repairs remedy the deficiencies or the ladder is replaced. A red stripe will be painted on the rails at eye level as an additional barrier.
 - o The inspection team is empowered to tag ANY ladder **Out of Service** that they consider unsafe or that workers consider unsafe. Examples of unsafe would be ladders with multiple deficiencies in a specific category or gross defects in any one of the inspection criteria. The inspection team is expected to contact the SME for verification of ladders which may need service.

6. Work Planning

- a. For yellow-tagged ladders, work planning must include an assessment of mitigation of identified hazards and risks. Alternate means of access will be considered (e.g., scaffolding, lifts, etc.) on an individual basis, taking into account feasibility and if the use of the ladder will continue to be required.
- b. Work planning will include:
 - All work using yellow-tagged ladders will be classified as permitted work and be classified as high risk, requiring sign off by ESH professional (ESHR).
 - In accordance with the Work Planning and Control for Experiments and Operations Subject Area, Section 2.4, a Job Safety Analysis (JSA) is required for ladders with an ESSH Risk Level of High. The intent is to have trained and qualified ESHR's complete JSA's.
 - Job walkthroughs will be conducted emphasizing ladder hazards and risks, fall protection, elevated work and materials handling practices, including
 - o Pre-use inspection of the condition of the ladder;
 - o Ladder climbing essentials: 3 points of contact;
 - o Not allowing worker to ascend/descend carrying tools and materials (includes back packs);
 - o Not carrying heavy or bulky materials.

- Training - Supervisor to review worker training records to ensure that they are current (ladder safety, fall protection, PPE). In addition, confirm that Job Assessment Forms (JAF) (Fitness for Duty Determinations) are current and no restrictions for elevated work are indicated.

7. Conclusion of EOC

At the conclusion of the EOC, all fixed ladders will have the following:

- Ladders will be tagged as appropriate:
 - o Yellow = Caution
 - o Red = Out of Service
- Ladders will be painted with a stripe 9 – 15 inches long on the right rail:
 - o Green = Acceptable
 - o Yellow = Caution
 - o Red = Out of Service
- Work package will include:
 - a. Completed checklist
 - b. Photo of any deficiency
 - c. Key Plan mark up
- Communications to BNL staff indicating:
 - o Any ladder not visibly marked (painted) or tagged must be evaluated prior to use.
 - o Trades are not permitted to install services in the climbing area of any fixed ladder.
- All completed work packages will be forwarded to the F&O Chief Engineer to be assessed and compiled into a database as well as Maximo.

8. Repair and/or Replacement

The F&O Chief Engineer will develop a strategy in conjunction with Safety and Health Services Division to address OSHA deficiencies.

Figures 1 and 2. Examples of Warning Placard and Caution Tag:

