

Authority Having Jurisdiction - Electrical Inspection Program Description

Scope

The Laboratory Electrical Safety Committee (LESC) has been vested as the Authority Having Jurisdiction (AHJ) for electrical safety at Brookhaven National Laboratory (BNL) by DOE through the Laboratory Director, the Deputy Director of Operations (DDO), and the Assistant Laboratory Director for ESH. The AHJ for electrical matters is responsible for interpreting the requirements of Electrical Codes and Standards and for approving electrical equipment, materials, installations, and procedures at BNL. To fulfill the requirements as AHJ, the LESL has established two programs: 1) the Electrical Equipment Inspection Program (EEI) and, 2) the Electrical Materials and Installation Inspection (EMII) Program.

Definitions

Approved. Acceptable to the authority having jurisdiction.

Authority Having Jurisdiction (AHJ). The organization responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure. For electrical issues, this is the LESL.

Basis for Approval. The acceptance of equipment, materials, and workmanship for compliance to the Codes and Standards by persons approved by the LESL to perform field inspections. Note: The LESL is not delegating the authority to approve equivalent means to meet the intent of the Codes and Standards; nor is it delegating the authority to provide formal Interpretation, Equivalency, or Variance to the Codes and Standards.

Programs

Electrical Equipment Inspection Program (EEI) – The scope of this program covers the review and approval of all electrical equipment at BNL operating above 50 volts, whether it is part of or connected to the facility electrical system, or a piece of stand-alone equipment. The qualifications for an Electrical Equipment Inspector are a minimum of ten years combined schooling/experience with electrical/electronic system design and/or electrical system construction/installation/inspection/safety. In addition, proposed EEIs attend classroom training and are evaluated in the field by approved EEIs during inspections. The EEI's qualifications, and completion of necessary training and field evaluations are reviewed by the LESL for final approval. The EEI program is the subject of Section 7.1: Electrical Equipment Inspection of the Electrical Safety Subject Area.

Electric Materials and Equipment Installation Inspection Program (EMII) – The scope of this program covers the review and approval of the materials and installation of the electrical distribution for facilities and hard-wired equipment. There are three levels of inspectors: Chief Electrical Inspector (CEI), Local Electrical Inspector (LEI), and Self Electrical Inspector (SEI), as described below:

- 1) Chief Electrical Inspector (CEI), after being approved by the LESC, shall be responsible for the overall coordination of the EMII program. Qualifications for this position are ten years experience with industrial/commercial facility electrical systems as a Master or journeyman electrician, electrical supervisor, or electrical engineer; and an LESC approved external Electrical Inspector Certification. Acting independently of line responsibility for electrical installations within Organizations, the CEI shall:
 - a. Perform quality checks by re-inspection of a sampling of work previously inspected by Local Electrical Inspectors (LEI) and Self-Electrical Inspectors (SEI) to ensure consistency in the interpretation of Code requirements;
 - b. Provide oversight of the LEIs and SEIs;
 - c. Coordinate supplemental training (over and above required training indicated in the Job Training Assessment) to address specific issues as they arise, based on any perceived deficiencies resulting from the above inspections or from lessons-learned from other DOE facilities or industry;
 - d. Support LEIs by assisting as requested, including in their absence;
 - e. Assist the Laboratory Electrical Safety Officer (LESO) in electrical matters when requested, including in his absence;
 - f. Is an ex-officio voting member of the LESC.
- 2) Local Electrical Inspector (LEI) –The LEI is a qualified electrical worker, recommended by the cognizant Organization Head and reviewed by the ALD of ESH&Q for approval by the LESC and CEI. The LEI is the delegate of the CEI in the field and can provide the basis for approval of modifications and new installations. The Organization Head retain the primary responsibility for the compliance with Codes and Standards in their Organization and authorize the LEI to provide the basis for approval for the electrical work for the LESC. The LEI can also provide the basis for approval of electrical work performed by staff that is not approved as Self Electrical Inspectors (SEIs). The LEI can approve workers under their jurisdiction as SEIs. Qualifications include five years of work experience in the areas they will be responsible for approving, formal NEC training, and passing a BNL test or receiving a LESC waiver for the test. The formal NEC training is by an LESC-approved NEC course, by an LESC-recognized electrical training program, or by an LESC-approved external Electrical Inspector certification.
- 3) Self Electrical Inspector (SEI) – A qualified electrical worker approved by the LEI to be responsible for inspection and approval of their own work as Code compliant for Like-In-Kind or NRTL listed repair and replacement. The qualifications for SEI are relevant experience in the areas they work and LESC approved training that demonstrates the worker is knowledgeable to perform the work in compliance with applicable Codes and Standards. Self Inspectors can provide the basis for approval of Like-in-Kind or NRTL listed repair and replacement work of a non-inspector under their supervision.

Organizations shall be responsible for developing an LESC-approved procedure for documenting the basis for approval.

Local Inspectors and the Chief Electrical Inspector also meet the qualifications to be EEI inspectors under the EEI Program.