



# CLARK COUNTY DEPARTMENT OF BUILDING & FIRE PREVENTION

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Ronald L. Lynn, Director/Building & Fire Official  
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## SUBJECT: TG-90-2013 ELECTRICAL TESTING SERVICES

**1.0 PURPOSE: 22.02.500 Other Inspections.** In addition to the required electrical inspections (BAC 22.02.475), the Building Official may require other inspections of any work to ascertain compliance with this Chapter and the technical codes. These inspections and tests are required in the National Electrical Code and the National Fire Protection Association Standards and Guidelines.

**2.0 SCOPE:** This guideline provides information for the listing of approved electrical testing agencies and approved electrical testing technicians. This guideline also provides information for the testing, reporting, submittal, review and acceptance of certain electrical testing services performed by the approved electrical testing agencies.

### 3.0 ABBREVIATIONS & ACRONYMS:

- BAC:** Building Administrative Code of Clark County
- CCBD:** Clark County Building Department
- EPT:** Emergency Power Testing
- ETA:** Electrical Testing Agency
- FIG:** Field Inspection Guideline
- GFPT:** Ground Fault Protection Testing
- GRT:** Ground Resistivity Testing
- HPIT:** High Potential Insulation Testing
- MEGT:** MEG-Ohm Testing
- NEC:** National Electrical Code
- NETA** International Electrical Testing Association
- NFPA:** National Fire Protection Agency
- QSM:** Quality Systems Manual
- TG:** Technical Guideline

**DEFINITIONS:** For the purposes of this technical guideline, certain terms, phrases, words and their derivatives shall be construed as specified in this section and the Building Administrative Code of Clark County.

**Approved Electrical Testing Agency:** An agency that is approved by the Building Official who is engaged in the testing of electrical equipment and systems and the reporting of test results.

**Quality Systems Manual:** A quality systems manual is composed of a series of documents that contain policy statements, procedures, reporting requirements and personnel qualifications. The QSM defines the procedural responsibilities to ensure the operations are completed, reviewed and documented.

**APPROVED DATE: NOVEMBER 20, 2013**

**EFFECTIVE DATE: NOVEMBER 27, 2013**

Written By:	Concurred By:	Approved By:
<i>Brian Lenihan</i>	<i>Dennis Hunt</i>	
Brian Lenihan, P.E. Senior Engineer	Dennis Hunt Building Specialist Trainer	Brenda Thompson Manager of Inspections

**Electrical Testing Services:** Is a collection of tests (HPIT, MEGT, GFPT, EPT and GRT) performed by an approved electrical testing agency of certain electrical components and systems to verify compliance to Clark County codes.

#### 4.0 REFERENCES:

National Fire Protection Association Standards and Guidelines  
National Electrical Code  
Building Administrative Code of Clark County  
Southern Nevada Building Code Amendments

#### 5.0 RESPONSIBILITIES:

##### 5.1 Permit Holder:

- 5.1.1 The permit holder shall engage an approved Electrical Testing Agency (ETA) to perform all required electrical testing services.
- 5.1.2 The permit holder shall cause the ETA to provide certain required reports for the following electrical testing services:
  - 5.1.2.1 High Potential Insulation Testing (HPIT)
  - 5.1.2.2 MEG-Ohm Testing (MEGT)
  - 5.1.2.3 Ground Fault Protection Testing (GFPT)
  - 5.1.2.4 Emergency Power Testing (EPT)
  - 5.1.2.5 Ground Resistivity Testing (GRT)
- 5.1.3 The permit holder shall coordinate electrical testing services with the approved ETA.
- 5.1.4 The permit holder shall coordinate electrical testing services and schedule required inspections with CCBD.

##### 5.2 Electrical Testing Agency:

- 5.2.1 The agency designated to perform electrical testing services shall be approved by Clark County.
- 5.2.2 An agency seeking approval status shall apply for approval using forms available for that purpose. Forms are available at CCBD website @ [http://www.clarkcountynv.gov/Depts/development\\_services/engineering/How%20To%20Guides/tg90.pdf](http://www.clarkcountynv.gov/Depts/development_services/engineering/How%20To%20Guides/tg90.pdf). In order to obtain approval, an ETA must submit to CCBD for review and approval a Quality Systems Manual (QSM), other information as required in this guideline and the listing fees.
- 5.2.3 A QSM shall be prepared in accordance with Section 6.0 of this TG.
- 5.2.4 The QSM shall be approved in writing by a company officer.
- 5.2.5 The approved electrical testing personnel employed by the approved ETA shall perform all required testing and other services as required in the BAC, NEC, NFPA and this guideline.
- 5.2.6 The approved ETA shall submit all required reports to CCBD

##### 5.3 Clark County Department of Development Services-Building Division

- 5.3.1 CCBD personnel shall review the ETA's initial application package for compliance to this guideline and referenced codes and standards.
- 5.3.2 CCBD shall review the ETA's annual renewal package for compliance to this guideline and referenced codes and standards.
- 5.3.3 CCBD personnel shall receive and review electrical testing reports in accordance with Section 6.0. After the review of electrical testing reports, CCBD personnel shall disposition required electrical inspections as appropriate in the permit inspection history.

#### 6.0 PROCEDURES:

## **6.1 Initial Approval Requirements**

Agencies wishing to become approved to perform electrical testing services shall submit the following:

- 6.1.1 Request Letter
- 6.1.2 Application Form (form 806B)
- 6.1.3 NETA certification letter approving agency.
- 6.1.4 Equipment calibration forms.
- 6.1.5 Listing of proposed electrical testing technician along with:
  - 6.1.5.1 Current copy of NETA certification with expiration date.
  - 6.1.5.2 Current copy of Training Verification Form. A sample form is provided in Appendix B.
- 6.1.6 Quality Systems Manual: The QSM shall contain all the following elements:
  - 6.1.6.1 Description of the organization including complete legal name and address.
  - 6.1.6.2 Names and positions of the principal owners, officers, and directors.
  - 6.1.6.3 Agency's managerial structure and principal personnel.
  - 6.1.6.4 Scope of agency services: (HPIT), (GFPT), (MEGT), (GRT) and/or (EPT).
  - 6.1.6.5 Written procedures shall be established for the inspection, testing, and reporting of each service area.
  - 6.1.6.6 A listing of electrical testing and other equipment required to perform proposed scope of agency services. Equipment used by the agency's personnel for electrical testing services must meet approved national standards.
  - 6.1.6.7 Written procedures shall be established for the subcontracting of calibration, verification and testing of equipment.
  - 6.1.6.8 Proposed electrical testing technicians.
  - 6.1.6.9 Test Report forms. Sample electrical testing form is provided in Appendix A.
- 6.1.7 Initial agency listing fee of \$150.00.
- 6.1.8 Initial technician listing fee of \$50.00 per technician.

## **6.2 Annual Renewal Requirements**

Agencies wishing to remain on Clark County listing as an approved electrical testing agency shall submit the following:

- 6.2.1 Request Letter
- 6.2.2 Application Form (form 806B)
- 6.2.3 NETA certification letter approving agency.
- 6.2.4 Current equipment calibration documentation.
- 6.2.5 Listing of proposed electrical testing technician along with:
  - 6.2.5.1 Current copy of NETA certification with expiration dates.
  - 6.2.5.2 Current copy of Training Verification Form. A sample form is provided in Appendix B.
- 6.2.6 Quality Systems Manual: Provide an update for any changes such as:
  - 6.2.6.1 The agency name or location.
  - 6.2.6.2 The agency's managerial structure and principal personnel.
  - 6.2.6.3 The scope of agency services.
  - 6.2.6.4 The report forms used to document electrical testing activities.
  - 6.2.6.5 Testing or inspection procedures.
- 6.2.7 Annual renewal listing fee of \$50.00 for each technician

## **6.3 Electrical Testing Procedures**

- 6.3.1 All electrical testing procedures shall comply with requirements and guidelines in the NEC, BAC and NFPA.
- 6.3.2 Additional requirements are listed in Appendix C, FIG-E-011.

**6.4 Reporting & Submittal of Electrical Testing Results**

- 6.4.1 All reporting of electrical testing results shall comply with requirements and guidelines in the NEC, BAC and NFPA.
- 6.4.2 Test results shall be submitted to CCBD as required by CCBD.
- 6.4.3 Reporting procedures shall comply with Field Inspection Guideline FIG-E-011.
- 6.4.4 The final report may be emailed to [greenfst@clarkcountynv.gov](mailto:greenfst@clarkcountynv.gov) or turned into Field Services.

**6.5 Review and Approval of Electrical Testing Results**

- 6.5.1 A final report shall be submitted to the CCBD.
- 6.5.2 Acceptance of the report by CCBD personnel will result in an entry of approval of required electrical QAA clearance of the electrical permit.
- 6.5.3 Additional requirements are listed in Appendix C, FIG-E-011.

**7.0 RECORDS:**

All report forms that are planned for use in performing Electrical Testing shall be submitted with the Quality Systems Manual for review and approval. Sample report forms are provided in appendix A.

**8.0 ATTACHMENTS:**

- Appendix A:** Sample Electrical Testing Report Form
- Appendix B:** Training Verification Form.
- Appendix C:** Field Inspection Guideline FIG-E-011
- Appendix D:** Application Form 806B

**9.0 REVISION HISTORY:**

Title	Revision/Approved Date	Effective Date
TG-90-2013	November 20, 2013	November 26, 2013
TG-90-2007	February 28, 2007	June 1, 2007

Part A  
Report Title

### Sample Report Form

**ELECTRICAL TESTING SERVICE (HPIT, MEGT, GFPT, EPT or GRT) RESULTS**

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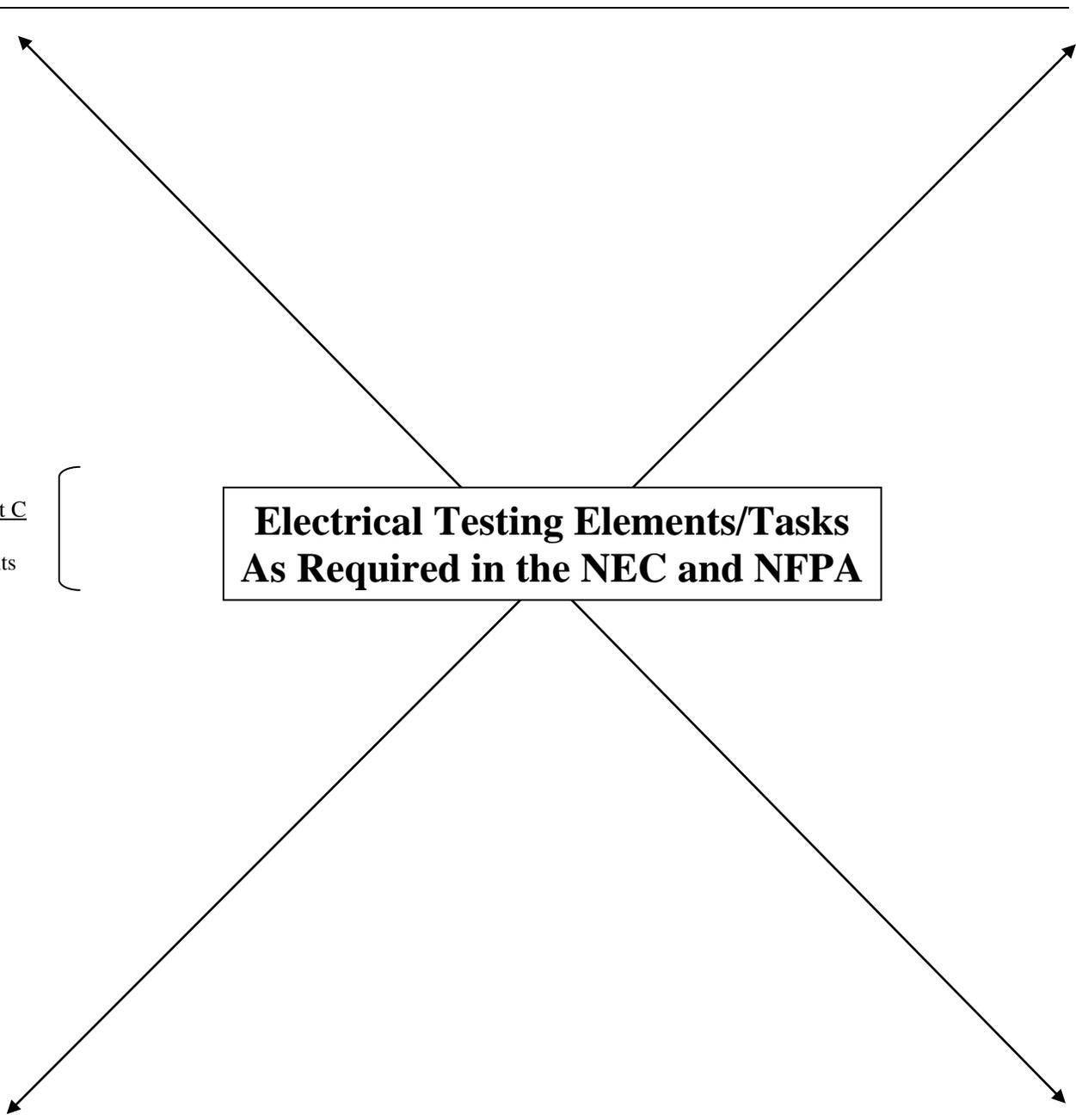
Part B  
Project  
Information

**Project Information: Project Name, Project Address, Permit Number, Technician  
Name & Signature, Company Officer Name & Signature**

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Part C  
Testing  
Elements

**Electrical Testing Elements/Tasks  
As Required in the NEC and NFPA**



Part D  
Reserve for  
CCDB

**CCDB Approval and Comments Area**

**TG-90 – Appendix B**

**TRAINING VERIFICATION RECORD**

\_\_\_\_\_  
Electrical Testing Agency

Employee Name \_\_\_\_\_

Date of Hire \_\_\_\_\_

NETA Certification No. \_\_\_\_\_ Expiration Date \_\_\_\_\_

<b>Electrical Service Test</b>	<b>Initial Training Date</b>	<b>Follow-up Training Date</b>
HPIT		
MEGT		
GFPT		
EPT		
GRT		

Training Provided By \_\_\_\_\_  
(Company Officer)                      Print Name                      Signature

Training Provided By \_\_\_\_\_  
(Manufacturer)    Print Name/Manufacturer

( ) I acknowledge the above training and a current copy of TG-90.

Employee Signature \_\_\_\_\_                      Date \_\_\_\_\_

**This Form Must be Submitted for Each Technician Approval/Renewal Request**



*Clark County Building Department*  
**FIELD INSPECTION GUIDELINE**

<b>SUBJECT:</b>	<u>Quality Assurance Agency - Electrical Testing</u>			<b>FIG-E-011</b>
<b>Effective Date:</b>	<b>June 1, 2007</b>	<b>Revised:</b>	<b>May 30, 2013</b>	<b>Approved By:</b> <b>BAT</b>
<b>Code Chapter:</b>	<b>22.02.510 Admin Code</b>			<b>Page 1 of 1</b>

**Interpretation:** Electrical testing shall be performed by an approved agency listed by Clark County.

- Testing shall include but is not limited to: ground resistance tests, hi-pot testing of insulation, ground-fault protection system testing, and meg-ohm testing. Such testing shall be deemed Special Inspection and performed by approved Special Inspectors as per BAC. 22.02.510
- Plans Exam may determine upon review of plans prior to permit issue that electrical testing will be required and stipulate the electrical QAA (EQAA) requirement.
- Electrical testing that becomes necessary during the course of construction shall be identified by the electrical inspector. The electrical inspector shall require the owner or owner’s representative to return to Plans Exam to obtain an EQAA contract.
- Upon completion of field testing, a field inspection/testing report shall be left at the job site indicating the testing performed, test date, inspector and results of the inspection. A field report indicating approval of the required inspection/testing will allow the electrical inspector to proceed with routine requested inspections.
- The electrical inspector shall monitor that the testing has been performed and reported as approved at the appropriate time(s) during the construction and inspection processes.
- A final EQAA report shall be submitted to the Inspection Special Assignment group. Acceptance of the report by the Inspection Special Assignment group will result in an approved entry of the required clearance for the EQAA.

**Revision History:**

Reference #	Title	Effective Date	Revised	Reviewed
FIG-E-011	Quality Assurance Agency- Electrical Testing	June 1, 2007	May 30, 2013	



# CLARK COUNTY BUILDING DEPARTMENT

4701 West Russell Road, Las Vegas, NV 89118 ~ (702) 455-3000

Electrical Testing Agencies

## Request for Initial or Renewal of Clark County Approval Application Form



ACCREDITED

Company Name \_\_\_\_\_

Company Officer \_\_\_\_\_

Mailing Address \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_

E-Mail Address \_\_\_\_\_

### FEES REQUIRED TO BE SUBMITTED WITH APPLICATION

Initial Agency Listing (\$150.00) \$ _____	Annual Agency Renewal Process (N/C) \$ _____
Initial Listing-Technician (\$50.00/per) \$ _____	Annual Renewal-Technician (\$50.00) \$ _____

Total Amount Submitted: \$ \_\_\_\_\_

### DOCUMENTATION REQUIRED TO BE SUBMITTED WITH APPLICATION

<b><u>INITIAL AGENCY LISTING:</u></b> TG-90 Approval Process  Request Letter  Agency NETA Certification  Quality Systems Manual  Proposed Personnel	<b><u>ANNUAL RENEWAL:</u></b> TG-90 Renewal Process  Latest Revisions to the Quality Systems Manual, (QSM).  Agency NETA Certification  Current Equipment Calibration Documentation  If no revision in the past year, provide the current revision number and date. Rev# _____ Date _____
<b><u>INITIAL TECHNICIAN LISTING:</u></b> TG-90 Approval Process  Current NETA Certifications with Expiration Dates  Current copy of Training Verification Form	<b><u>TECHNICIAN RENEWAL:</u></b> TG-90 Renewal Process  Current NETA Certifications with Expiration Dates  Current copy of Training Verification Form

### RETURN THIS APPLICATION FORM WITH YOUR CHECK TO THE FOLLOWING ADDRESS:

Clark County Building Department  
Attn: Brian Lenihan  
4701 W. Russell Rd.  
Las Vegas, Nevada 89118

Please submit a check or money order, along with the required documentation, with each application.

Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_