Egyptian Electric Cooperative Association

RULES AND SPECIFICATIONS FOR ELECTRIC SERVICE

Revised: 4/10/2007

Your Touchstone Energy® Cooperative

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SECTION 1
FOR ALL MEMBERS

1.0 GENERAL INTRODUCTION

The purpose of this service manual is to identify the responsibilities and safety requirements of *Egyptian Electric Cooperative Association (EECA)*, and the electric member.

This service manual shall govern the installation requirements for all new construction and all electric service upgrades. Modifications to existing electric services may require that the member upgrade equipment to be in compliance with this service manual and the current edition of the National Electric Code (NEC). Existing equipment should be maintained in accordance with the existing NEC code in effect at the time of installation.

EECA, in issuing this service manual, is in no way relieving the member or their contractor of his or her responsibility to install the wiring in accordance with the NEC, National Electrical Safety Code (NESC) and local ordinances.

In the interest of safety, only a qualified and licensed electrical contractor should handle electric installations. The information contained within this service manual is subject to change and will be revised from time to time to keep pace with progress in the electric industry. It is the responsibility of the member or their contractor to contact EECA regarding any revisions to the service manual. Additional copies of this service manual may be obtained online at www.eeca.coop.

1.01 EECA OFFICES LOCATIONS

EECA maintains offices at the following two locations:

A. Headquarters – 1005 West Broadway, Steeleville, IL 62288 phone number - (965-3434)
B. District office – 10169 Old Highway 13, Murphysboro, Il 62966 phone number - (684-2143)

1.02 AVAILABILITY OF ELECTRIC SERVICE

Due to the size of our Cooperative, electric service may not be immediately available in all areas. Rest assured that with a little bit of planning, EECA will ensure that you have electric service available, per the regulations set forth within this document. When inquiring about the purchase of rural property, please take the time and contact the EECA Engineering Department to discuss the availability of electric service. A simple phone call may save you, our prospective member, unnecessary headaches and expenses.

Please have the following information available when you call us:

- Site plan.
- Details of your construction schedule, including the date you will need temporary service and the date you will be ready for permanent service
- Electrical load information including square footage, type of heat, air conditioning loads, freezers, total horsepower of motors, horsepower of largest motor.
- Engineer and/or Contractor's name, address and phone number.
- Service information – service address, where will the service be location in respect to the building, how many meters will be needed for multiple buildings
- Billing information – possible billing address
- Service conductor information- numbers and sizes.

1.03 MEMBERSHIP REQUIREMENTS

Any person, firm association, corporation, or body politic or subdivision thereof shall become a member of EECA upon receipt of electric service from the Cooperative This is consist with EECA policy 103, attached herein as Figure 1.

1.04 EECA LINE EXTENSION

The cooperative will make single-phase or three phase electrical service available to full-time or seasonal residences in its service area in accordance with its by-laws and based on the terms and conditions set forth in Policy Bulletins 501-507 attached herein as Figures 3-9.

If the line extension is required on private property, it shall be the responsibility of the member to provide EECA with the necessary easements.

1.05 APPLICATION FOR SERVICE

A. Where it is required that a new electric service be installed over/under public streets or roads or over/under a railroad, EECA may be required to obtain permits before any work can begin; this can be a timely process, so apply for electric service early.

B. Where it is necessary to cross the property of others with underground or overhead lines, easements must be obtained from those landowners.

C. All members requiring electric service from EECA must follow and comply with the policies and procedures as listed in this service manual.

D. All new members are subject to a “New Member Connection fee” as defined in Policy Bulletin 105 attached herein as Figure 2.

E. EECA will not make any service connections until the service entrance facilities and main distribution panel(s) are properly installed and inspected, where required.

F. Only EECA service crews shall make connections between EECA lines and member lines.

G. EECA reserves the right to discontinue service to any electrical installation which may have been damaged by fire, vandalism, or other causes, or deemed unsafe, until repairs have been made and approved by the proper authority.

H. Any questions or comments on this manual should be addressed to EECA Engineering.

1.06 RELOCATION OF EECA FACILITIES

A. The cost of relocating any and all EECA facilities on easements or public rights-of-way shall be borne by the party requesting relocation. Payment shall be made in advance based upon an estimate provided by EECA engineers. The EECA Engineering Department will provide, at no cost, an initial estimate for the relocation. A non-refundable deposit in the amount of $50 may

be required for the preparation of any multiple engineering estimates to determine the cost of the relocation. The deposit will be applied to the final payment.

B. If it is not feasible for EECA to relocate facilities on public rights-of-way, it is not obligated to do so.

1.07 SUPPLEMENTAL FACILITIES

A. EECA will furnish without additional charge those facilities, which are required to service a normal load. A normal load is described as a relatively constant load, without large fluctuations, at a power factor of not less than 90 percent lagging.

B. When supplemental facilities or capacity is required either by member request or to adhere to good engineering practice, the member shall pay in advance the estimated cost of the installed facilities. EECA will furnish, install, operate, and maintain these facilities.

1.08 PERMITS

All members must obtain the necessary permits and inspections from the local governing bodies as required by law. Any cost of obtaining such permits shall be borne by the member.

1.09 NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRIC SAFETY CODE

A. Installation of electric conductors and equipment within or on public and private buildings must comply with the current addition of the National Electrical Code, NEC, and all applicable City, County, State and Federal ordinances and regulations.

B. Installation under the exclusive control of electric utilities is not covered by the NEC, but instead by the National Electric Safety Code, NESC. In the event of a conflict of regulations, the strictest standard shall apply.

1.10 SAFETY AND UNAUTHORIZED USE OF ELECTRIC SERVICE

A. All members and their representatives should utilize safe operating procedures and maintain minimum safety clearances as specified in the NEC, NESC, and Occupational Safety and Health Administration (OSHA) regulations.

B. The state of Illinois prohibits unauthorized use of electricity with intent to deprive the owner, EECA, and provides punishment by fine and imprisonment. Any person or persons responsible for meter tampering or theft of electrical energy shall be subject to such prosecution.

C. This means that it is against the law to tamper with meters, instrument transformers or metering devices, this includes the removal of any meter sealing ring and or the removal of a meter seal. Any un-metered electric service is unlawful and can result in termination of service and prosecution under the law.

D. Written permission must be obtained from EECA for each specific job that requires cutting or removal of an EECA meter seal.

1.11 STANDARD SECONDARD VOLTAGES AND VOLTAGE REGULATION

A. EECA shall supply the following secondary voltages:

   i. 120/240 volts single-phase system 120/240 volts, 3-wire.
   ii. 208Y/120 volts three-phase grounded wye system, 120/208 volts 3-wire (single-phase) from 4 wire (three phase) 208Y/120 volts, 4-wire (three phase).
   iii. 240/480 volts single-phase 3-wire. This type only offered for outdoor lighting system.

B. For service voltages not listed above, please consult the EECA Engineering Department.

C. EECA shall supply the member with electric service, which shall be normally within the following voltage

Nominal Voltage	Minimum Voltage	Maximum Voltage
120 V	113V	127 V
208 V	196 V	220 V
240 V	226 V	254 V
480 V	452 V	508 V

D. Electric service shall not exceed the minimum or maximum limits for periods of not longer than one minute, measured at the member's meter base in the correct scale.

E. The operation of utility protective devices employed for reliability and safety during fault conditions of utility operations may result in sags or momentary zero-voltage conditions.

F. The following causes of variations in voltage that exceed the EECA voltage standard are not considered a failure to satisfy these rules:

- Service interruptions
- Action of the elements - weather
- Temporary separation of parts of the system from the main system
- Periodic temporary fluctuations of short duration
- Other causes beyond the control of EECA

1.12 METERING

A. General Metering Requirements

1. The meter shall always be placed outdoors. The preferred location is either on the meter pole or a metering pedestal location near the property line.

2. All meters shall be unobstructed and made accessible to EECA employees for reading and maintenance at all times. Attaching the meter to the side of buildings is allowed only via prior approval from the EECA Engineering Department.

3. The centerline of a single meter or top meter of a multiple gang arrangement shall be installed a minimum of five (5) feet and a maximum of six (6) feet above final grade level.

4. For all socket type meters, the load side connections will always be made to the bottom connectors of the meter base and the line side connections will always be made to the top connectors of the meter base.

5. Multiple gang arrangements shall be limited to not more than three meters vertically for kWh meters and two meters vertically for demand meters.

6. Meters shall be always located outside for complexes of three stories or less.

7. Landlords and/or owners of multiple occupancy buildings and trailer courts shall be responsible to clearly and permanently identify each meter, by stencil or other means, the unit and/or area in their complex that the meter services. All meters must be properly and permanently identified before service will be energized.

8. Once electric meter bases have been installed and identified, the owner or a designated representative will be responsible for scheduling a minimum of 48 hours in advance with the EECA Engineering Department to have the electric meters set. Each electric meter will be verified to ensure proper metering. A lock-band will be installed on all electric meters.

9. EECA is not responsible for credit adjustments prior to notification of meters being incorrectly identified. EECA will upon notification from the landlord/owner correct all billing records to reflect the correct identification of the meters with the units and/or areas they service.

B. Service Entrance Conductors, Conduit, and Equipment

1. The member shall consult the latest edition National Electrical Code for size and type of wire and conduit approved for service entrance use.

2. The service entrance conductors must be continuous and without splices or joints from the meter base to the main distribution equipment within the building.

3. Any main disconnect switch or panel used for service entrance equipment shall be approved and listed by the Underwriter's Laboratory for such use.

4. Per the NEC, service disconnecting means shall not be installed in bathrooms.

5. Please reference Figure 30 to view allowable wire sizes.

6. All self-contained secondary-metering installations shall be limited to a maximum of 240 volts and a maximum of 200 amps.

7. Any service exceeding 240 volts and/or 200 amps shall require installation of potential transformers (PTs) and/or current transformers (CTs).

8. EECA shall supply the potential transformers, current transformers, and cabinet suitable for interior installation. If the CTs and PTs can not be installed indoors, it is the responsibility of the member to provide and install an enclosure with an appropriate National Electrical Manufacturers Association (NEMA) rating for the application. When installed on an exterior building wall the current transformers shall be securely mounted on a bracket.

9. The member must supply a suitable weatherproof and lockable cabinet for exterior installations. A minimum of a NEMA 3 rating is required for all outdoor installations.

10. For three phase, four wire (3ph, 4W) delta meters, the power leg (high phase) of the service shall be wired to the right side connectors of socket-type meter bases, disconnect switches and panelboards.

11. Where current transformers (CTs) or potential transformers (PTs) are required for metering of electrical service they shall be located on the exterior building wall for overhead services. For underground services the CTs or PTs may be located at the pad mount transformer (if possible) or within the building. No CTs

or PTs shall be mounted on any EECA power pole without approval of the EECA Engineering Department.

12. The polarity dots of the CTs shall always be on the line side of the service.

13. For 120/240-volt 4-wire delta service the CT for the power leg shall be mounted on the bottom of vertical installations and on the right side (as one faces the CTs) for horizontal installations.

C. Grounding Requirements

Please reference Section 1.21 for information on grounding.

D. Use of Meters

1. No *EECA members shall sub-meter his electrical energy for the purpose of billing such electrical energy*. All meters used for electric energy billing purposes shall be owned and maintained, read and billed by EECA. Sub metering is defined as the metering of electrical energy that has already been metered.

2. EECA shall seal all of its meters, demand reset arms, and current transformer, CT, cabinets. It is illegal for anyone to tamper with any EECA meter or metering equipment, break any seal or attempt to avoid payment of electrical energy.

3. No foreign attachments such as surge suppressors or load management equipment shall be made to EECA metering equipment unless specifically approved in writing by the EECA Engineering Department.

4. All metering sockets shall be labeled as to their maximum ampacy, maximum voltage, and must shown manufacturer's name and catalog information.

5. Where a member requests and EECA agrees to provide primary metering, the member shall provide, install and maintain all primary equipment on the load side of the

primary metering equipment. The member should contact the EECA Engineering Department, for details if considering primary metering.

6. Any member requiring special metering, such as pulse initiators, surge protectors, or special harmonic metering should contact the EECA Engineering Department for availability.

7. No member shall ever move, cut the wire to or in any manner break the circuit to a current transformer meter. This causes an over-voltage on the CT, which is very dangerous to personnel and can damage the current transformer.

1.13 IDENTIFICATION

EECA employees will show proper identification upon demand by the member. The member should deny admittance to anyone not possessing a proper identification card.

1.14 DIGGING AND EXCAVATING

A. Any member digging or excavating in an area developed with underground electrical service shall contact the Joint Utility Locating Information for Excavators, JULIE, at 1-800-892-0123.

B. Contact should be made 48 hours in advance, excluding holidays and weekends, of any activity.

C. Anyone who does not contact JULIE and who damages any underground facilities shall pay the cost to repair or replace the damaged facilities.

1.15 RIGHT OF WAY MAINTENENCE

A. Before overhead electrical service is installed or extended, a new member must do the following:

1. Provide a minimum of 30 to a preferred 60 feet of clearance

limb-to-limb (15 to 30 feet on each side of the line) for all new **overhead** primary distribution lines. All species of trees which grow over 15 feet tall must be cut to the ground if they are within 15 to 30 feet of the proposed new line. All limbs which hang within 15 to 30 feet of the line must be trimmed back to meet the clearance requirement. In addition, if any trees or limbs outside of the 15 to 30 feet requirement will impose a hazard to the future line, then they must be cut or trimmed. EECA may require additional right-of-way clearance as determined by the EECA Engineering Department. If trees or limbs to be cut are near or will endanger an existing line, the member/applicant should not cut or trim them. EECA will do the cutting or trimming.

2. Provide a minimum of 20 to a preferred 30 feet of clearance limb-to-limb (10 to 15 feet on each side of the line) for all new **underground** primary distribution lines. All trees must be cut to the ground if they are within 10 to 15 feet of the proposed new line. All limbs which hang within 10 to 15 feet of the line must be trimmed back to meet the clearance requirement. EECA may require additional right-of-way clearance as determined by EECA Engineering Department. If trees or limbs to be cut are near or will endanger an existing overhead line, the member/applicant should not cut or trim them. EECA will do the cutting or trimming.

3. Provide necessary right-of-way clearance for all new secondary distributions lines. Necessary clearance will be determined by the EECA Engineering Department.

4. Agree not to plant any trees within 15 to 30 feet of any EECA overhead distribution line and within 10 to 15 feet of any underground distribution line.

5. The member/applicant should notify EECA when the right-of-way for the new line has been cleared. On new services where extensive cutting or trimming is needed, an EECA representative will inspect the right-of-way before construction crews are sent to construct the line. The line will not be constructed if the right-of-way requirements are not met.

B. EECA will endeavor to maintain overhead and underground right-of way as follows:

1. All trees will be trimmed according to arborist standards as described in the most up-to-date ANSI A300 Guidelines.

2. All trees will be trimmed for the maximum clearance allowed while using the ANSI A300 standards and/or to a minimum of three (3) years clearance.

3. All trees that cannot be trimmed utilizing the ANSI A300 Guidelines should be removed.

4. All dead, dying, or defective limbs of authorized work, which may interfere with or endanger operational safety and line maintenance, shall be removed even if they may be outside the clearance specified.

5. All limbs and brush resulting from authorized work shall not be left on the property overnight unless the landowner is notified.

6. All wood larger than 3 inches in diameter from a trimmed or removed tree shall be cut into reasonable lengths for the property owner to easily handle and neatly stacked at the base of the tree or adjacent to the stump

7. All wood less than 3 inches in diameter from a trimmed or removed tree shall not be left on the property.

8. All wood and brush debris shall not be left within public, road, or utility right-of-ways, and must be moved to an area (edge) that will not interfere with utility access or flow of streams and irrigation ditches.

9. Permission from the property owner must be obtained prior to windrowing or stacking of brush. If brush is windrowed, useable wood must be separated from the brush, and the windrow must be placed in such a way that it will not limit normal access to right-of-ways and include “gaps” at each pole structure.

10. All stumps shall be cut at a height no greater than 3 inches above ground and treated with an approved herbicide unless off-site contact is possible or if the tree is unaffected by the herbicide (i.e.: most evergreens). All brush stumps shall be flush cut, resulting in no “spears” left in the right-of-way.

11. EECA may use any herbicide necessary for each situation as long as the herbicide meets the members' approval; EECA approval; and all local, state, and federal governmental laws, regulations, and requirements.

12. Three phase and multi-phase lines shall be trimmed as to not have any overhang while maintaining the health of the tree. When overhang branches are left on tree, they should appear to be structurally able to withstand the stress of wind, snow, and ice.

13. Overhang on single-phase lines shall be trimmed to obtain a minimum of 15 feet clearance and any overhang branches.

1.16 EASEMENTS

Easements are strips of ground dedicated for the necessary use of the public. Any utility has the right to install, maintain, and keep in good operating condition equipment installed on an easement for the necessary welfare of the public.

A. Overhead Easements

For all overhead installations, EECA requires ***thirty (30) feet*** in width to lay, construct, operate and maintain overhead poles and cable lines for transmitting and distributing electric power, including all wires, cables, transformers, capacitor banks, switches, fuses, ground connections, attachments, equipment, accessories and appurtenances desirable in connection therewith under, upon and across the lands of Owner(s).

B. Underground Easements

For all underground installations, EECA requires ***fifteen (15) feet*** in width to lay, construct, operate and maintain underground conduit and cable lines for transmitting and distributing electric power, including all wires, cables, hand-holes, manholes, transformers, transformer enclosures, concrete pads, connection boxes, ground connections, attachments, equipment, accessories and appurtenances desirable in connection therewith under, upon and across the lands of Owner(s).

C. Terms and Conditions of Easements

1. In granting an easement, it is understood that the location of all overhead and underground facilities will be such as to form the least possible interference to farm operations, so long as it does not materially increase the cost of construction.

2. All overhead and underground facilities erected hereunder shall remain the property of EECA. EECA shall have the right to inspect, rebuild, remove, repair, improve and make such changes, alterations, substitutions and additions in and to its overhead and underground facilities as EECA may from time to time deem advisable, including the right to increase or decrease the total number of overhead or underground facilities within the stated easement.

3. EECA reserves the right to remove any overhead and underground facilities upon termination of service to property described.

4. EECA shall at all times have the right to keep the easement clear of all buildings, structures or other obstructions such as trees, shrubbery, undergrowth, and roots. EECA shall have the right to mow, cut, trim and spray within the easement area and to cut or trim any dead, weak, leaning or dangerous trees outside the easement area that are tall enough to strike the wires. All trees and limbs cut by EECA at any time shall remain the property of Owner(s).

5. Owner(s), successors and assigns, may use the land within the easement for any purpose not inconsistent with the rights hereby granted, provided such use does not interfere with or endanger the construction, operation or maintenance of EECA's overhead or underground facilities. For the purpose of constructing, inspecting, maintaining or operating its overhead or underground facilities, EECA shall have the right of ingress to an egress from the easement over the lands of Owner(s) adjacent to the easement and lying between public or private roads and the easement, such right to be exercised in such manner as shall occasion the least practicable damage and inconvenience to Owner(s).

6. EECA reserves the right to remove fences on the easements and EECA will restore the fences to their original condition.

7. EECA reserves the right to dig where it is necessary and EECA will restore the ground to its original condition.

8. If a member denies EECA an easement that is required to provide electrical service, then the member will become responsible for all additional costs incurred to provide service.

1.17 SPECIAL CONTRACTUAL SERVICES

From time to time, EECA may enter into special contractual agreements where the nature of the electric service requires it to do so. Examples of this type of service would be large industrial loads, street lighting, highway interchange lighting, security lighting, traffic controls, etc.

1.18 USE OF PORTABLE GENERATORS

Portable generating sources may only be connected through an approved disconnect switch. This switch must positively disconnect the utility feed before connecting the generator to the member load. Failure to follow this procedure can result in injury or death to EECA personnel and can lead to severe damage of the generator. Contact the EECA Engineering Department to review the installation procedure.

1.19 USE OF BACKUP GENERATORS

The use of a member owned, backup generator is permitted on an approval process. Please notify the EECA Engineering Department so that we can review the installation and ensure that the generator is connected in a safe manner. EECA will provide the member requesting to install a stationary generator the specifications to make the installation. At least the following conditions shall be met before any such generator is approved:

A. The generator is connected to the member's facilities via specified equipment, such as a two pole, double throw disconnect switch that will not allow the generator to energize any EECA facilities. Three-phase service requires a three pole, double throw switch. Installation must conform to the National Electric Code. This switch is normally located between your home's main service panel and the EECA power source.
B. The transfer switch must be sized according to the rating of a home's service entrance equipment. Common sizes are 100, 150,

or 200 amperes. To ensure proper installation of a standby generator, comply with electrical code requirements.

C. EECA will inspect the installation after completion and before any attempt is made to run the generator.

D. A sign shall be placed at the service-entrance equipment indicating type and location of on-site optional standby power sources. A sign shall not be required for individual unit equipment for standby illumination.

- Standby. A sign shall be placed at the service-entrance equipment that indicates the type and location of on-site optional standby power sources.
- Grounding. Where the grounded circuit conductor connected to the optional standby power source is connected to a grounding electrode conductor at a location remote from the optional standby power source, there shall be a sign at the grounding location that shall identify all optional standby power and normal sources connected at that location.

E. Installation and maintenance of generator is consistent with all applicable codes and is consistent with EECA policy bulletin 509, attached herein as figure 10.

1.20 MOTORS

A. All three phase motors shall be protected by three (3) over current units (trip coils, relays or thermal cutouts will be allowed), one in each phase. It shall be the member's responsibility to assure that all motors are protected according to the National Electrical Code (NEC).

B. EECA will not be liable for motors, which are damaged due to single phasing of a three phase electrical service, voltage unbalance, low voltage, and reversed phase sequence. It shall be the member's responsibility to provide such protection.

C. All motors rated more than 60 horsepower shall have a reduced voltage starter, which meets the approval of the EECA Engineering Department.

D. All three phase equipment, that is sensitive to loss of a single phase, should be protected by a disconnect to automatically remove power on detection of a phase loss.

E. It is recommended that motor starting currents be limited to the following values to avoid causing power quality problems for other customers interconnected to the distribution system. Further limits on motor starting currents may be needed based on the transformer size or the electrical design of the service due to effects on the secondary side of the transformer but typically meeting these limits will avoid negative power quality impacts for other interconnected customers. These limits allow motors up to 60 horse power to be started without reducing the starting current, provided the motor design is NEMA “G” or better:

1. Three Phase 208 volt: 1,000 Amps
2. Three Phase 240 volt: 900 Amps
3. Three Phase 480 volt: 450 Amps

F. The starting current limitations are applied to the sum of motor starting currents if multiple motors are started simultaneously.

G. Motor starting currents are considered to be the same as the locked-rotor currents of the motor.

1.21 GROUNDING

The grounding and bonding of all conductors and grounding electrodes shall be installed, owned, and maintained by the member. All equipment used such as meter sockets, enclosures, metal conduits, and neutral conductors shall be permanently bonded and grounded in accordance with the latest edition of the *NEC* and the following requirements set forth by EECA.

A. Ground Rod installation

1. The required method of grounding shall be a copper ground rod/electrode.

2. The grounding rod/electrode shall be at a minimum 5/8" in diameter and a minimum of eight (8) feet long. The rod shall be without joint or splice.

3. The grounding rod/electrode shall be installed per NEC Table 250-66 such that at least 8 feet of length is in contact

with the soil. It shall be driven to a minimum depth of eight (8) feet, except where rock is encountered.

4. The grounding rod/electrode shall be installed such that the top end is flush with or below ground level.

5. The grounding rod/electrode shall be installed such that it is within two (2) feet of the outside of a building exterior foundation wall or directly next to a metering pedestal location.

6. Certain installations may require supplemental grounding methods. Please call the EECA Engineering Department if you need assistance in properly grounding your equipment.

B. Grounding Conductors

1. All grounding connections shall be made by the use of suitable lugs, pressure connectors, clamps, irreversible compression-type connectors, or exothermic welding.

2. Soldered connections are not permitted.

3. Splices will only be allowed if installed with the use of irreversible compression connectors listed for the purpose, or by the exothermic welding process.

4. All ground wire running above the ground and outside of the building shall be encased in conduit. Rigid galvanized steel or a minimum of Schedule 40 electrical grade PVC conduit is allowed. Aluminum conduit, intermediate conduit, and EMT will not be allowed.

5. The grounding electrode conductor shall be connected at the service equipment and metering enclosures when a service entrance does not contain a grounded circuit conductor.

6. Please reference Figure 30 for correct grounding conductor sizes.

C. Bonding Conductors

1. No conductors other than phase and grounded circuit

conductors shall be installed in service-entrance raceways.

2. Other utility grounding systems will not be allowed to be bonded to the metering equipment enclosures. However, the NEC does require that they be bonded together. Bonding to the member-owned grounded facilities is allowed.

3. Please reference Figure 30 for correct grounding conductor sizes.

1.22 POWER DISTURBANCES

A. Harmonics

1. Please refer to IEEE Standard 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems, for information on power disturbances and isolation transformers.

2. Any power disturbance as defined in IEEE 519, caused by a member, may result in the installation of an isolation transformer at the member's expense.

B. Voltage Flicker

1. Please refer to IEEE Standard 141-1993 as a guideline for the level of allowable voltage flicker caused by a member load that may affect other members.
2. Members are not allowed to start any load connected to EECA electric lines that produces flicker to adjacent customer that exceeds the stated IEEE Standard.
3. When an objectionable flicker condition is determined to be due to a specific member, EECA will notify the member who will be responsible for correcting the problem. EECA can provide personnel to assist members if this issue arises.

C. Stray Voltage

1. Stray voltage is defined as a potential difference between neutral “grounded system” and the true earth. This condition can cause issues with dairy cattle and

other farm livestock.

2. Some levels of neutral-to-earth voltage are inherent on non-faulty standard multi-ground distribution systems. Other causes normally associated with neutral-to-earth voltage are:
    (1) Electric fault conditions at the site
    (2) Ungrounded equipment.
    (3) Electric service imbalance.

3. Please contact the EECA Engineering Department if you believe that there is stray voltage on the farm. EECA will make every effort to identify and try to resolve stray voltage issues.

D. Power Line Carrier Signals

1. EECA reserves the right to use carrier frequency signals on its system for communication, equipment control, internet services, and collecting system data.
2. The carrier frequency signals used should in no way interfere or damage any member equipment. EECA assumes no responsibility for damages resulting there-from.
3. If any member feels that our carrier frequency signals are causing distortion or interference, then it is the member's responsibility to install additional suitable protective equipment.
4. The member is forbidden to use any part of the Association's system for carrying foreign electric currents, broadcasting, control, or carrier current transmission.
5. Customers using carrier current or any control frequency other than 60 Hertz shall be required to install suitable equipment to prevent these frequencies from being imposed upon or entering the EECA electric system.

1.23 OVERHEAD CLEARANCES

The following overhead line clearances are listed herein for reference as described in the in the latest addition of the NEC. Please contact the EECA Engineering Department to review any variance.

A. Clearance above Roofs.

1. As per the NESC 234C3 d(1), Service drop conductors, including the drip loop, shall not be readily accessible, and when not in excess of 750 volts, they shall have a clearance of not less than eight (8) feet from the highest point of roofs or balconies over which they pass.
2. Exceptions are allowed by code. Please consult your electrical contractor to see if your installation qualifies for an exception to this rule.

B. Vertical Clearances from Final Grade

Service drops shall have the following minimum clearance from final grade:

1. *Ten (10) Feet*: at the electrical service entrance to buildings at the lowest point of the drip measured from final grade or other accessible surface only for service drop cables supported on or cabled together with a grounded bare messenger and limited to 150 volts to ground.

2. *Ten and one-half (10-1/2) Feet* - at the electrical service entrance to buildings at the lowest point of the drip loop measured from final grade or other accessible surface only for service drop cables supported on or cabled together with a grounded bare messenger and limited to 300 volts to ground**.**

3. *Twelve (12) Feet* - Over residential driveways for service drop cables that are supported on or cabled together with an effectively grounded bare messenger or neutral, limited to 150 volts to ground. Over spaces and ways subject to pedestrians or restricted traffic only for insulated, non-shielded supply cables limited to 750 volts to ground supported on and cabled together with an effectively grounded bare messenger. Spaces and ways subject to pedestrians or restricted traffic only are those areas where riders on horseback, vehicles, or other mobile units exceeding (8) feet in height, are prohibited by regulation or permanent terrain configurations or are otherwise not normally encountered nor reasonably anticipated**.**

4. *Twelve and one half (12.5) Feet* - over residential driveways for insulated service drop cables limited to 300 volts to ground.

5. *Fifteen (15) Feet* - Over or running along alleys, driveways (see above requirements for lower voltages), or parking lots for insulated, non-shielded supply cables limited to 750 volts to ground supported on and cabled together with an effectively grounded bare messenger.

6. *Eighteen (18) Feet* - over public streets, alleys, roads, parking areas subject to truck traffic, driveways on other than residential property, and other than land traversed by vehicles such as cultivated, grazing, forest and orchard.

3. **Clearance from Buildings**

Electric wires installed along buildings have vertical and horizontal guidelines.

A. Horizontal Component

The following are for insulated, non-shielded supply cables limited to 750 volts to ground supported on and cabled together with an effectively grounded bare messenger.

1. Five (5) Feet rule – distance of five feet separation to walls, projections and guarded windows.

2. Exceptions are allowed by code. Please consult your electrical contractor to see if your installation qualifies for an exception to this rule.

B. Vertical Component

The following are for insulated, non-shielded supply cables limited to 750 volts to ground supported on and cabled together with an effectively grounded bare messenger.

1. *Three and one half (3-1/2) Feet rule* – A distance of three and one half feet separation is required at locations that go over or under roofs or projections not readily accessible to pedestrians or above railings, walls, or around balconies or roofs.

2. *Eleven (11) Feet rule* - Over or under balconies and roofs readily accessible to pedestrians.

3. *Sixteen (16) Feet rule*- Over roofs accessible to truck traffic. Trucks are defined as any vehicle exceeding 8 feet in height.

4. Exceptions are allowed by code. Please consult your electrical contractor to see if your installation qualifies for an exception to this rule

4. Clearance from Swimming Pools.

In areas where electrical services exist, swimming pools shall be installed as to maintain the following clearances:

A. Service drops shall not be installed over a swimming pool or an area within ten (10) feet of the water's edge, any diving boards, and diving towers.

B. Service drops where voltage from the energized conductor to ground *does not exceed* 750 volts shall have the a minimum clearance of twenty-two and one-half (22.5) Feet in any direction from the water level, edge of pool, base of diving platform, or anchored raft.

C. Service drops where voltage from the energized conductor to ground is in excess of 750 volts and less than 22,000 volts shall have a minimum clearance of twenty-five (25) Feet in any direction to the water level or edge of the water's surface and a minimum clearance of seventeen (17) Feet in any direction to diving platform or tower.

5. Supports Over Buildings.

Where practicable, conductors passing over a building shall be supported on structures, which are independent of the building. Where necessary to attach conductors to the roof, they shall be supported on substantial structures.

6. Clearance From Buildings

No signs, chimneys, billboards, radio and television antennas, tanks, parking lot lights, and other installations not classified as buildings or bridges shall be installed closer than ten (10) feet horizontally from any EECA primary feeder line unless ten (10) feet vertical clearance can be maintained.

SECTION 2
FOR ALL RESIDENTIAL MEMBERS

2.01 INTRODUCTION

The regulations in this section apply to all residential members. A residential member is defined as a member receiving electrical service from EECA to a single family or duplex residential building unit. Individual residential units within an apartment or condominium building will be billed on residential rates and are addressed in the General Service section of this manual. Any exceptions to these regulations must be approved by the EECA Engineering Department and are subject to supplemental facilities charges.

2.02 SERVICE APPLICATION PROCEDURE

A. Temporary Service

1. The member or their representative shall apply for temporary service by contacting an EECA Service Representative located at either office.

2. EECA will install temporary service upon payment of temporary service charges. A minimum of 48 hours should be allowed for scheduling. Members not ready to be energized when the Service Crew arrives may experience additional delays for rescheduling.

B. Permanent Service

1. A member can apply for permanent service by contacting an EECA Service Representative located at either office.

2. The Service Representative will evaluate their requirements, arrange a site visit with an EECA Engineer (if required), and request and accept the member's service deposit and or new connection deposit, where applicable.

3. The member shall obtain a meter base, provided free of charge by EECA, from the EECA Engineering Department.

Please contact the Engineer assigned to your project prior to picking up your meter base.

4. EECA will energize permanent service upon notification by the member to the EECA Operations Department or your Project Engineer when service is ready to be energized. A minimum of 48 hours should be allowed for scheduling. No service will be energized that does not comply with minimum standards established in this manual. Members not ready to be energized when an EECA Service Crew arrives may experience additional delays for rescheduling.

C. Service Upgrade

1. A member can apply for an upgrade of electric service by contacting an EECA Service Representative located at either office.

2. The Service Representative will evaluate their requirements, arrange a site visit with an EECA Engineer (if required), and request and accept the service upgrade fee, where applicable.

3. EECA will energize permanent service upon notification by the member to the EECA Operations Department or your Project Engineer when service is ready to be energized. A minimum of 48 hours should be allowed for scheduling. No service will be energized that does not comply with minimum standards established in this manual. Members not ready to be energized when an EECA Service Crew arrives may experience additional delays for rescheduling.

2.03 OVERHEAD SERVICE REQUIREMENTS

A. Responsibilities

1. The member shall be responsible for providing, installing and maintaining the conduit, weatherhead, ground and enough cable to extend at least two (2) feet beyond the

weatherhead. The member shall also be responsible for installing the meter base and equipment for attaching the EECA service conductor on the building.

2. EECA will supply the meter base and the house knob (for siding) to be installed during construction by the member. Any other attachment points will be supplied and installed by the member. For houses with siding, a deadend screw hook or house knob shall be attached to a building stud, not the siding.

3. EECA will install the overhead service drop and a watt-hour meter and make the final connection between this service drop and the member's service entrance conductors.

B. Installation Requirements

1. Aluminum or nonmetallic conduit or service entrance cable will be permitted for service entrance risers which do not require the service to be attached to the riser.

2. Service entrance risers which extend above the roof must be properly guyed, galvanized steel; aluminum will not be permitted. For guying requirements contact the Electric Service Department.

2.04 UNDERGROUND RESIDENTAL SERVICE REQUIREMENTS

A. Responsibilities

1. The member shall be responsible for providing, installing and maintaining all conduit, conductor and devices from the member's load to the final connection point with EECA facilities and for installing the meter base. Contact the EECA Engineering Department to establish a connection point to EECA facilities.

2. EECA will supply the meter base and supply and install the service cable end connectors at the distribution pedestal or transformer. EECA maintains the right to limit the number and size of the conductors entering these facilities. Where the member's service is of a greater number of cables or larger size of conductor than is acceptable to EECA, the member must provide and install a service termination enclosure acceptable to EECA. EECA will install secondary conductors from its distribution pedestal or transformer to the member's termination enclosure and connect to the member's service conductors.

3. EECA will install the meter and make the final connection between the EECA facilities and the member's service conductors.

B. Installation Requirements

1. Underground residential services of 320 amps or less shall be installed as shown in Figure 16.

2. Underground residential services of 400 amps shall be installed as shown in Figure 17. Note the 400 amp underground residential service shall include a 400 amp disconnect switch on the load side of the meter base within three (3) feet of the meter base on the exterior of the building.

3. Service conductors must be encased in conduit from the meter base to a point of eighteen (18) inches below final grade level. This conduit may be continued to the EECA facilities or may be terminated with a plastic bushing, and cable, NEC approved for direct bury, continued to EECA facilities. In either case the service shall be installed a minimum of twenty-four (24) inches below final grade.

4. The service conductors at the distribution pedestal or pad mount transformer shall be flexible and enter through the opening in the bottom of the pedestal or concrete pad.

5. Where a member desires underground lines, he must comply with all other provisions of this section.

6. Where a member can be provided underground service from an overhead distribution line, the member must supply enough service cable to reach the EECA secondary distribution conductors on the pole. Consult the Operations Department, to determine this height. EECA will install the member's service cable and conduit on the pole and make the connection to the secondary conductors.

7. If two or more members can be served underground from the same pole, EECA may at the discretion of the Engineering Department, set a distribution pedestal at the base of the pole. The members will then be required to provide only enough cable to allow connection to the EECA conductors within the pedestal.

SECTION 3
FOR ALL COMMERICAL AND INDUSTRIAL MEMBERS

3.01 INTRODUCTION

The regulations in this section apply to all members not covered in the residential section of this manual. Any exceptions to these regulations must be approved by the EECA Engineering Department and may be subject to supplemental facilities charges.

3.02 SERVICE APPLICATION PROCEDURE

A. Temporary Service

1. The member or their representative shall apply for temporary service by contacting an EECA Service Representative located at either office.

2. EECA will install temporary service upon payment of temporary service charges to the Service Representative and notification by the member to the Service Department when service is ready to be energized. A minimum of 48 hours should be allowed for scheduling. No service will be energized that does not comply with the minimum standards established in Section 5 of this service manual. Members not ready to be energized when the Service Crew arrives may experience additional delays for rescheduling.

B. Permanent Service and Service Upgrade

1. A member can apply for permanent service by contacting an EECA Service Representative located at either office.

2. The Service Representative will evaluate their requirements, arrange a site visit with an EECA Engineer (if required), and request and accept the member's service deposit and or new connection deposit, where applicable.

3. The member shall obtain a meter base, provided free of charge by EECA, from the EECA Engineering Department. Please contact the Engineer assigned to your project prior to picking up your meter base

4. EECA will energize permanent service upon notification by the member to the EECA Operations Department when

service is ready to be energized. A minimum of 48 hours should be allowed for scheduling. No service will be energized that does not comply with minimum standards established in this manual. Members not ready to be energized when an EECA Service Crew arrives may experience additional delays for rescheduling.

3.03 GENERAL REQUIREMENTS

All of the secondary voltages mentioned in Section 1.11 are not available in every section of the EECA service area. Anyone planning a new service should first check with the EECA Engineering Department. Any voltages or load requirements not complying with these regulations are subject to approval by the EECA Engineering Department and may be subject to supplemental facilities charges. One service voltage/type will be provided for multiple occupancy buildings of up to six (6) units. Buildings of more than six (6) units may be provided additional services at the discretion of the EECA Engineering Department.

A. Metering

1. All Metering installations must comply within Section 1.12 of this manual.

2. ***CAUTION:*** *No member shall ever move, cut the wire to or in any manner break the circuit to a current transformer meter. This causes an over-voltage on the CT, which is very dangerous to personnel and can damage the current transformer.*

B. Service Entrance Conductors and Conduit

1. The member should consult the latest edition of the NEC for size and type of wire and conduit for service entrance

use. Please reference Figure 30 for current sizing requirements.

2. The service entrance conductors must be continuous and without splices or joints from the meter base to the main distribution equipment within the building.

C. Service Entrance Equipment

1. Any main disconnect switch or panel used as service entrance shall be listed and approved by the Underwriter's Laboratory for such use.

2. In accordance with NEC rule, the main disconnect switch or panel shall be installed not more than ten (10) feet from the point where services enters the building.

D. Grounding Requirements

All meter bases, switchgear, panels, transformers, manholes and other electrical equipment shall be properly grounded according to the provisions of the National Electrical Code (NEC), article 250.

C. Motor Requirements

See refer to Section 1.20 for questions regarding motors.

3.04 OVERHEAD COMMERICIAL SERVICE REQUIREMENTS

A. Responsibilities

1. The member shall be responsible for providing, installing and maintaining the conduit, weatherhead, ground and enough cable to extend at least two (2) feet beyond the weatherhead. The member is also responsible for installing the meter base and equipment for terminating the EECA service conductor on the building, if allowed by EECA. Where current transformers are required for metering of the service the member shall install these transformers as well as provide and install both line and

load side mounting lugs and meter wiring conduit from the current transformers to the meter base. Where potential transformers are required for metering of the service the member shall install those transformers as well as provide and install the meter wiring conduit from potential transformers to the meter base. The location of all CTs and PTs is subject to approval from the EECA Engineering Department.

2. EECA will supply the meter base and house knob to be installed during construction by the member. Where current or potential transformers are required for metering of the service EECA will supply the current or potential transformers and interior mounting equipment. EECA will provide, install and maintain the wiring from the current or potential transformer to the meter base.

3. EECA will install the overhead service drop and meter and make the final connection between the service drop and the member's service entrance conductors.

B. Installation Requirements:

1. Metallic or non-metallic conduit may be used for all service entrance risers that do not extend above the roof.

2. Service entrance risers which extend above the roof must be properly guyed, galvanized steel; Aluminum or non-metallic is not permitted. For guying requirements contact the Electric Service Department.

C. Clearance for Overhead Services.

All Overhead service clearances for General Service members will be the same as for residential members. Please refer to section 2.04 C for clearance information.

3.05 UNDERGROUND COMMERCIAL SERVICE REQUIREMENTS

A. Responsibilities

1. The member shall be responsible for providing, installing and maintaining all service cable and conduit from EECA's facilities to the building service equipment. Contact the EECA Engineering Department to determine the connection point to EECA facilities.

2. Where the member's service is of a greater number of cables or larger size of conductor than that acceptable to EECA, the member must provide and install a service termination enclosure adjacent to the transformer, which is acceptable to EECA.

3. EECA will install secondary conductors from its transformer to the member's enclosure and connect to the member's service conductors. Where current transformers are required for metering of the service, and are located on or in the building, the member shall install those transformers as well as provide and install both line and load side mounting lugs and meter wiring conduit from the current transformers to the meter base.

4. Where potential transformers are required for metering of the service the member shall install those transformers as well as provide and install the meter wiring conduit from potential transformers to the meter base.

5. Where service is provided from EECA overhead, transformer(s) or secondary conductors, the member shall install 10 feet of galvanized metallic conduit up the EECA pole, provide EECA with enough conduit to reach the transformers or secondary, and provide enough service cable to reach EECA facilities.

6. The member shall contact the EECA Engineering Department to schedule installation and determine which area of the pole the conduit is to be located.

7. Where an individual pad mount transformer is to be installed on the member's property, the member shall provide, install, and maintain the concrete transformer pad.

8. Where a member provided transformer vault is required for electrical service, the member shall design that vault according to the requirements of the NEC, the NESC, and this service manual. The member shall install all necessary ventilation systems, emergency exit equipment, and secondary cable end connectors.

9. EECA will provide all meter bases, current or potential transformers, and interior CT or PT mounting equipment, where required. EECA will provide, install and maintain the wiring from the current or potential transformers to the meter base.

10. EECA will provide, install, and maintain all primary cable, switchgear, transformers, and terminating cabinets.

11. EECA will install the meter and make all primary connections as well as the final connection between the member's service conductors and EECA facilities.

B. Installation Requirements

1. All underground primary duct, transformers, manholes, vaults and transformer pads shall conform to EECA and National Electric Code (NEC) specifications. The EECA Engineering Department must approve all plans.

2. ***Duct System***. All underground primary duct and direct buried primary cable shall be a minimum cover of 42 inches below ground level. All underground primary duct shall be PVC schedule 40, rigid galvanized or a EECA Engineering approved equal. All three phase underground primary ducts shall be four- (4) inch shall be encased in three (3) inch concrete envelope. Single-phase primary duct may be direct buried, without concrete encasement, a minimum of 42 inches below ground level with the approval of the EECA Engineering Department. All primary conduit bends shall be galvanized rigid or an EECA Engineering approved equal with a minimum three- (3) foot radius. The secondary conductors at the pad mount transformer

shall be flexible and enter through the opening in the bottom of the concrete pad.

3. ***Transformer***. The member shall consult the EECA Engineering Department for the size of concrete pad, location of pad, minimum distance from the building, and the location of secondary and primary conduit to be installed. The member should contact the EECA Engineering Department with site plans in order to determine a mutually agreeable transformer location. All transformers installed in or near driveways or parking lots, which are in danger of vehicular damage, shall be protected by guardrails installed by the member and approved by EECA. All transformer pads shall be installed on well-compacted earth or be provided with proper foundations to avoid settling or tilting. Member is responsible for all costs associated with any damage to transformer bushings or leveling the transformer due to poor compaction methods. EECA requests that all transformers be located within fifteen (15) feet of parking lots, driveways, or roads to allow access for maintenance. *To maintain a working clearance, no trees, bushes, or shrubs shall be planted within six (6) feet of the front or opening side of a transformer.* EECA reserves the right to remove all foliage on public right of way or easement that blocks access to EECA equipment.

4. ***Manholes***. Adequate clearance between and around cables must be maintained to insure safe operation for the equipment and service personnel. A clear working space sufficient for performing the necessary work shall be maintained. The horizontal dimensions of clear working space shall not be less than (3) feet. The vertical dimensions shall not be less than (6) feet. With the exception of grounding or bonding conductors, horizontal runs of supply cables shall be supported at least (3) inches above the floor. Separation between supply and communication facilities shall be per table 341-1 of the NESC. The opening of the manhole shall have a loadbearing ring with a minimum inside diameter of thirty (30) inches. While the wall is being poured, the contractor shall install pulling eyes in the wall opposite

each bank of conduit. Where drainage of manholes is into sewers, suitable traps shall be provided to prevent entrance of sewer gas into manholes. Standard drainage is twelve- (12) inch diameter twenty-four inch deep vitrified title sump with gravel fill. Before entering manholes, the manholes must be adequately ventilated to insure safety of all working personnel.

5. **Vaults**

a. Where the member's service requires the installation of EECA transformers or electrical equipment in an underground or interior building vault, the vault shall be designed according to NEC code, NESC code, and the walls, roof, floor, and doors shall be constructed of materials that have a minimum fire resistance of three (3) hours.

b. Vault Ventilation. In order to prevent over-heating of transformers and build-up of dangerous gases, all transformer vaults located underground or inside of buildings shall be forced-air ventilated or vented by a natural circulation of air to an outdoor area through openings of a net area not less than three (3) square inches per KVA pf transformer capacity. All transformers shall be filled with non-PCB contaminated materials in compliance with EPA regulations. No open gratings nor air vent openings shall be installed directly over the transformer or switching equipment, unless such equipment is designed and enclosed for outdoor use.

c. Accessibility. Transformer vaults and primary switchgear shall be made accessible to EECA Inspection and operating personnel at all times. Transformer vaults and primary switchgear rooms shall be provided with an entrance in the exterior wall of the building which will allow EECA personnel entrance and equipment removal without structural, piping or lighting changes in the building. The outside personnel entrance must be accessible to a single EECA service man

working alone. Outside entrances shall be equipped solely with EECA standard locks. The keys shall be accessible only to EECA personnel. To insure easy accessibility for maintenance purposes, a minimum of four (4) feet clear space shall be maintained around the transformers and switching equipment. Materials shall not be stored in transformer vaults, switchgear or electric equipment rooms.

d. Safety. No vault shall be energized until all permanent equipment, doors, locks and covers for openings have been installed and properly secured. All exits shall open outward from the vaults and shall be provided with a panic type lock to insure quick and easy exit for personnel safety. All doors must be clearly marked on the outside: "Danger High Voltage - Authorized Personnel Only". The owner of the building is responsible for securing interior doors against unauthorized entry. Adequate lighting shall be provided for normal working conditions. If the building shall contain an emergency lighting system, the transformer vaults shall also contain an emergency lighting system. The member shall provide a doorsill and concrete curb of sufficient height to confine within the vault the oil from the largest transformer. In no case shall the height be less than four (4) inches. No sprinkler system shall be installed in any vault containing electrical equipment. Consult the EECA Engineering Department for information about the volume of oil contained in the transformer.

e. Drainage. All vaults shall be provided with a drain. Where drainage is into sewers a deep seal "P" trap shall be provided to prevent entrance of sewer gas into the vault. The floor shall be pitched toward the drain. A back flow prevention valve shall be installed in all drains.

SECTION 4
RESIDENTIAL & COMMERCIAL DEVELOPMENTS

4.01 INTRODUCTION

The regulations in this section apply to all residential and commercial developments. This section defines the overall requirements and responsibilities for all developments; each developer should also familiarize themselves with the appropriate section for each type development for more detailed specifications. Any exceptions to these regulations must be approved by the EECA Engineering Department and are subject to supplemental facilities charges.

4.02 GENERAL REQUIREMENTS

A. The installation of facilities within a residential or commercial subdivision will be in accordance with EECA Policy Bulletin 505, attached herein as figure 7.

B. The developer must provide all necessary easements for the electric system subject to approval of the EECA Engineering Department. Any easement request that is denied by the developer may result in delays in EECA Engineering design and may increase costs to the developer.

C. The routes and locations of easement strips as shown on the construction plats furnished by EECA shall be staked by the developer far enough in advance to prevent any delay in excavation and cable installation. Stakes shall be clearly visible and carry the identifying lot number.

D. Each member within a development is responsible for installing and maintaining the underground service cable from the EECA distribution pedestal or transformer to the member's premises as required in Section 2 and 3 of this manual.

4.03 RESIDENTIAL SUBDIVISIONS

A. EECA will install a single-phase underground distribution system in all new residential subdivisions for four or

more lots. Upon discretion of EECA, an overhead distribution system may be installed around the perimeter of the subdivision where required.

B. Three-phase underground distribution will be installed only at EECA's discretion, unless the developer agrees to pay the additional cost of the installation.

C. All developers of residential subdivisions must sign a contract with EECA. This contract covers the costs per lot for electric service and any costs for street lighting, if required.

D. Work will begin according to the EECA construction schedule. EECA construction crews will not begin work until the developer has staked the property pins, sent EECA a check covering all costs, cleared all easements, staked the sewer systems where they will be in conflict with the electrical system to be installed, and has sent EECA a letter stating that the subdivision is to final grade.

E. Once a letter of final grade is received by EECA, the developer must pay the additional cost for any physical changes to the distribution facilities resulting from a change of grade. After final plat, all changes to the distribution system will be at the developer's expense.

F. Each individual residential electrical service must comply with Section 2 of this manual.

4.04 MULTI-FAMILY DEVELOPMENTS

Individual residential duplex dwellings will be provided electric service according to the terms and conditions of permanent residential service. Individual multi-family dwellings of more than two units will be provided electric service according to the terms and conditions of commercial facilities. This section shall apply to multi-family developments of more than one building on any given lot.

A. All electric facilities within a multi-family development such as an apartment or condominium complex consisting of two or more buildings must be installed underground. Upon discretion of EECA an overhead distribution system may be installed around the perimeter of the development where required.

B. Three-phase underground distribution will be installed only at EECA's discretion, unless the developer agrees to pay the additional cost of the installation. The developer must provide EECA with all necessary easements prior to EECA construction.

C. All electric facilities within multi-family developments such as apartments or condominium complexes consisting of two or more buildings must be installed underground. EECA shall install a single phase underground distribution system, including manholes, vaults, and equipment pads required to provide service to each building according to the layout and specifications of EECA. The developer or individual member shall be responsible for installing and maintaining the service cable from the distribution pedestal or transformer to each individual building or dwelling unit. Where streets within the development are dedicated to the City, the developer shall pay for the installation of electric street lighting that meets the specifications of EECA. At the discretion of EECA, an overhead distribution system may be installed around the perimeter of the development where required.

D. The developer must provide EECA with all necessary easements prior to EECA construction. If a perimeter easement is denied and no three phase overhead distribution can be installed, EECA will install an underground three-phase distribution system. The developer will be responsible for the material cost difference plus the cost of engineering the changes in design. This cost will be nonrefundable and must be paid prior to EECA construction.

E. All developers of multifamily developments must sign a contract with EECA. This contract covers the costs per

lot for electric service and any costs for street lighting, if required

F. For multi-family developments, the developer shall pay EECA in advance for the estimated cost of the underground system required to provide electrical facilities to each lot within the development. This payment is non refundable.

G. If the developer requires three phase distribution to be installed, EECA shall install a three phase underground distribution system, including manholes, vaults, and terminating cabinets, in accordance with the utilities layout and specifications. The developer shall install the transformer pads and conduit from said pad to the primary service point.

H. The developer shall deposit with EECA the estimated costs, if any, for the installation of said distribution system. The developer or individual member shall be responsible for installing and maintaining the service cable from the distribution pedestal or transformer to each individual building or dwelling unit.

4.04 MOBILE HOME PARK

A. EECA will install a single-phase underground distribution system in all new mobile home parks in accordance with EECA Policy Bulletin 504, attached herein as Figure 6.

B. Upon the discretion of EECA, an overhead distribution system may be installed around the perimeter of the mobile home park where required. Three-phase underground distribution will be installed only at EECA's discretion, unless the developer agrees to pay the additional cost of installation. The developer must provide EECA with all necessary easements prior to EECA construction. If a perimeter easement is denied and no three phase overhead distribution can be installed, EECA will install an underground three-phase distribution system. The developer will be responsible for the cost difference.

C. All developers of mobile home parks must sign a contract with EECA. This contract covers the costs per lot for electric service and any costs for street lighting, if required.

D. The mobile home park developer is responsible for installing and maintaining the underground service cable from the EECA metering pedestal to each individual mobile home.

E. EECA will install all meters and make the final connection between each service and the EECA facilities.

4.06 INDUSTRIAL AND COMMERCIAL DEVELOPMENTS

A. All electric service within industrial and commercial developments of more than one lot or more than one building on a single lot must be installed underground. At the discretion of EECA, an overhead distribution system may be installed around the perimeter of the development when required.

B. The developer must provide EECA with all necessary easements prior to EECA construction. If a perimeter easement is denied and no three phase overhead distribution can be installed, EECA will install an underground three-phase distribution system. The developer will be responsible for the material cost difference plus the cost of engineering the changes in design. This cost will be nonrefundable and must be paid prior to EECA construction.

C. EECA shall install a single phase underground distribution system including manholes, vaults, and equipment pads required to provide service to each building according to the layout and specifications of EECA. The developer or individual member shall be responsible for installing and maintaining the service cable from the distribution pedestal or transformer to each individual building or each unit, if buildings are going to have more than one EECA member.

D. For industrial and commercial developments where EECA installs the entire underground primary distribution system, the developer shall pay EECA in advance for the estimated cost of the underground system required to provide electrical facilities to each lot within the development. This payment is non refundable.

E. If site plans for buildings are not finalized with sufficient certainty, EECA may elect to install a single phase underground distribution system to a primary service point on or adjacent to the developer's property, which system would not include building transformer pads and conduit from the primary service point to each pad, and such transformer pads and conduit shall be installed by the developer. EECA shall then install all primary cable and transformers. The developer or individual member shall be responsible for installing and maintaining the service cable from the distribution pedestal or transformer to each building or, if applicable, each unit of each building.

F. If the developer requires three-phase distribution to be installed, EECA shall install a three-phase underground distribution system to a primary service point on or adjacent to the developer's property. That system would not include building transformer pads and conduit from the primary service point to each pad. The developer shall install the transformer pads and conduit.

SECTION 5
TEMPORARY SERVICE REQUIREMENTS

5.01 INTRODUCTION

Where electrical service is required for short periods of time for uses of a temporary nature such as construction projects, exhibitions, carnivals, etc., EECA will install additional facilities on a temporary basis. The member shall pay the cost of installing and removing all such facilities in accordance EECA Policy Bulletin 514, attached herein as Figure 11

EECA engineers shall estimate on a case by case basis, any special service requirements of the member that are not covered in Policy 514.

SECTION 6
LIGHTING

6.01 STREET LIGHTING

A. EECA will provide street lights according to their standard designs and specifications along all dedicated thoroughfares as dictated by municipality franchise agreements. In newly annexed areas, EECA will attempt to provide street lights within two years following annexation.

B. In all new commercial, industrial, and residential developments, EECA will install streetlights energized from underground cable according to their standard design and specifications along all dedicated streets. The developer shall be required to pay the entire cost of the installation.

C. EECA will install only streetlights of its standard design and specifications along dedicated thoroughfares. Any member desiring lighting other than EECA's standard will be required to install such fixtures at their own cost. Such lighting will require the approval of the EECA Engineering Department.

6.02 SECURITY LIGHTING

A. Introduction

EECA, upon request, will provide outdoor lighting for the purpose of safety and security for any qualifying member, as facilities are available. When this lighting is provided, EECA will have the final decision as to the location of the light and all facilities installed will remain the property of EECA. The member will be required to pay a flat monthly rate according to the facilities installed as listed in the provisions of the section of the City Code on Security Lighting.

B. Security Light Application Procedure

1. The member shall contact an EECA Service Representative located at either office to apply for security lighting service.

2. The request for security lighting will be passed to the Engineering Department. An Engineering Department Representative will arrange to meet the member, if necessary, to discuss the placement of the security light.

3. The member's billing will not be initiated until the security light has been installed.

C. General Requirements

1. No initial installation fee will be charged for the pole or light, nor will the energy use be metered. If additional equipment needs to be installed in an area where 120-volt service is not available, the member must pay the cost of installation of these additional facilities.

2. All rates for lights are subject to current EECA electric rate schedules. In the event of the passage of an electric rate adjustment ordinance by the EECA Board of Directors, all security light rates will be adjusted according to the approved rate adjustment.

3. All facilities installed by EECA remain the sole property of EECA.

4. Any member requesting relocation of an existing security light must pay the entire cost of the relocation unless the relocation is made for the convenience of EECA.

5. EECA reserves the right to remove any security light in case of excessive maintenance or replacement due to vandalism or other causes.

D. Installation Requirements

1. No light will be installed on any structure other than an EECA pole.

2. Lights may be installed on existing poles only if the pole can accommodate the light and it does not interfere with EECA's primary use of the pole.

3. No light will be installed where overhead 120-volt service is not available within the immediate area unless the member pays the cost of installing the facilities necessary to provide 120-volt service to the light.

4. Poles will only be installed in areas accessible to EECA line equipment without hazard to private property such as driveways, sidewalks, fences, etc.

5. A total of three lights will be allowed for each commercial or industrial member either installed separately or together unless those lights are installed on public property, such as street or alley right-of-way or installed on existing poles.

6. Lighting made available under this section will not be provided for the purpose of overall lighting of parking lots, private streets or roadways.

6.03 SECURITY LIGHTING RATES

A. The member will be required to pay a flat monthly rate according to the facilities installed as follows:

Option	Light Size		Monthly Fee	Additional Pole fee (add each extra pole)
1	100 W		$10.00	$3.00
2	250W		$15.75	$3.00
3	400 W		$24.75	$4.00