# Indianapolis Power & Light Company

# **Electric Service and Meter Manual**

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### WHERE TO OBTAIN INFORMATION

Please contact our website <u>http://apps.iplpower.com/goldbook</u> for the most current IPL Electric Service and Meter Manual (Gold Book). To be automatically notified of the latest revision, please send a blank e-mail to <u>charlie.eldridge@aes.com</u> with "GOLDBOOK CHANGES" and YOUR NAME in the subject line.

The "Gold Book" is in an Adobe Acrobat Reader (pdf) format, click on link <u>Free Adobe Acrobat Reader</u> for a free software download.

### CONTACT INFORMATION BY SUBJECT

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Distribution	GB0-100
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Customer Installations	
Metering	GB0-130
Service Connection	GB0-160
<u>Construction</u> Overhead and Underground Lines Construction Tree Trimming	GB0-140 GB0-180
Line Clearing (tree trimming)	(317) 261-8128
Power Quality (3	17) 261-5205 or (317) 261-5212
Real Estate Department (easements)	(317) 261-8510
Transmission Line Engineering	(317) 261-8514
Wrecking / Removal (317)	) 261-2700, (317) 630-5623 Fax

### MAILING ADDRESS

Indianapolis Power & Light Company Standards, Code Compliance, & Quality Control 1230 West Morris Street Indianapolis, Indiana 46221-1744

<u>E-MAIL</u>

ipl.standards@aes.com

### OFFICE ADDRESSES

Main Office, IPALCO Corporate Center - One Monument Circle Customer Service Center - 2102 N. Illinois Street Arlington Service Center - 3600 North Arlington Avenue Morris Street Service Center - 1230 West Morris Street

### ALL METERING EQUIPMENT IS AVAILABLE AT ARLINGTON SERVICE CENTER

# ELECTRICAL INSPECTION AUTHORITIES COVERING TERRITORY SERVED BY INDIANAPOLIS POWER & LIGHT COMPANY

<u>City of Indianapolis (Marion</u> <u>County, excluding Beech Grove,</u> <u>Lawrence, Southport and</u> <u>Speedway)</u>	Department of Code Enforcement City of Indianapolis 1200 Madison Ave. Suite 100 Indianapolis, IN 46225 <u>http://www.indy.gov/dce</u>	General Information Ph: 327-8700
Kevin Thompson Electrical Inspections Questions <u>e-mail</u> Electrical Inspections Hotline Automated Inspection Request Line	Supervisor, Building Inspections <u>mailto:ele.inspectionquestions@indy.gov</u> available from 8 - 5	Ph: 327-8938
<u>Beech Grove</u> Mike Fitzgerald	Electrical Inspector City Hall 806 Main Street Beech Grove, IN 46107	Ph: 223-4776
<u>Boone County</u> Jerry Seymour	Electrical Inspector 116 W. Washington St., Rm. 101 Lebanon, IN 46052	Ph: (765) 482-3821 • Fax: (765) 483-5241
	8 AM – 9 AM & 3 PM – 4 PM Mon. thru Fri.	
City of Cumberland (Hancock Co.)		Ph: 894-6202 Fax894-6216
<u>Greenwood</u> Tony Magnabosco Lowell Weber	Electrical Inspector 225 S. Emerson Avenue Greenwood, IN 46143	Ph: 881-8698
<u>Hamilton County</u> (Carmel and Clay Townships Only)	Building & Electrical Inspectors 1 Civic Square Carmel, IN 46032	Ph: 571-2444
	If a correction is needed,	

please send an e-mail with the correction to <u>charlie.eldridge@aes.com</u> to have it corrected

# ELECTRICAL INSPECTION AUTHORITIES COVERING TERRITORY SERVED BY INDIANAPOLIS POWER & LIGHT COMPANY

<u>Hancock County</u> Scott Williams	Court House Annex 111 American Legion Pl., Suite 146 Greenfield, IN 46140	Ph: 462-1133	
<u>Hendricks County</u> Mike Alverson Mike Riffey Tim Smith Scott Butrum	Building Inspector's Office 355 S. Washington St., Suite 212 Danville, IN 46122	Ph: 745-9254	I
<u>Johnson County</u> Wes Harris Roger Alderser	Building Commissioner and Inspectors 86 W. Court Street Court House Annex Franklin, IN 46131 Between 8:00 - 9:00 AM	Ph: 736-3723	
<u>Lawrence</u> John Kopetsky	Electrical Inspector 9001 E. 59 <sup>th</sup> Street, Suite 300 Lawrence, IN 46216	Ph: 545-8787	l
<u>Mooresville</u> Dennis Nail	City Electrical Inspector 4 E. Harrison Street Mooresville, In 46158	Ph: 831-9545	
Morgan County Scott Trout	Electrical Inspector 180 S. Main St., Suite 204 Martinsville, IN 46151	Ph: (765) 342-1060	
<u>Owen County</u> Josh Hogan	Electrical Inspector Owen County Building Dept. Court House Spencer, IN 47460	Ph: (812) 829-5017	I

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Inspections are needed if (see comment below about the service disconnect position):

- A The service has been cut off for over 1 year (IPL requires the Indianapolis selfcertification tag and reconnect numbers)
- B The building or structure has had a fire (Indianapolis requires a permit, self-certification tag, and authorization numbers if electrical construction is performed. IPL requires the Indianapolis self-certification tag and reconnect numbers if no electrical construction is performed)
- C The meter fitting has been relocated (Indianapolis requires a permit, self-certification tag, and authorization numbers)
- D A mobile home lot has a new or replaced mobile home (Indianapolis requires a permit, self-certification tag, and authorization numbers)
- E A new or altered service has been installed (Indianapolis requires a permit, self-certification tag, and authorization numbers)
- F Any service equipment past the meter to the service panelboard have been replaced with the same size, type and configuration of equipment (Indianapolis requires a permit, self-certification tag, and authorization numbers. Other areas, contact the AHJ for their requirements)
- G Any normal maintenance work has been performed without upgrading (For Indianapolis; repair/replacement of the meter, riser and weather head does not require an electrical permit unless it is being upgraded or relocated. Any work performed from the meter to the building including the panelboard requires an electrical permit. Other areas, contact the AHJ for their requirements)
- H IPL field personnel may require an inspection (regardless of the length of time), if in their opinion a hazardous or potentially hazardous condition exists

Indianapolis requirement: If emergency work is done after hours, the authorization number and electrical permit if required, shall be obtained the next business day.

### Service Disconnect Position Requirement for this Section Only

In all cases where a service has been disconnected, the main disconnect (circuit breaker or fuses) shall be in the open (off) position or the service will not be reconnected.

### 103 <u>RIGHT TO REFUSE OR DISCONTINUE SERVICE</u>

Since it is the Company's obligation to provide reasonably adequate service to all Customers, the Company reserves the right to refuse or discontinue service without notice if, in the opinion of the Company, the Customer's wiring, equipment or appliances are unsafe or unsuitable for receiving electric service or are harmful to the service of other Customers. The Company will make a reasonable effort to notify the Customer prior to disconnection and shall inform the Customer of the steps which must be taken to have service restored. This is reflected in the "<u>Rules and Regulations</u>, <u>Section 25.1</u>" that are approved by the Indiana Utility Regulatory Commission.

# 105 <u>TYPES OF SERVICE AVAILABLE</u>

The Company furnishes 60 hertz alternating current service at designated standard voltages. All types of service are not available in every locality and the type of service to be furnished at a particular location is determined by one or more of the following conditions:

Type of service available at the customer's location.

Type and size of load to be served.

Temporary or permanent service (for temporary underground services, see Section 220E).

# 107 <u>TEMPORARY SERVICE</u>

Temporary Service is defined as, any service in operation for less than 30 months per IPL Rules and Regulations, Rules 4.1 and 12.2.

# 110 <u>RATE CONSIDERATIONS</u>

To assure the customer obtains the most advantageous service and metering arrangement with regard to monthly charges for electric service, the Engineering Department should be consulted prior to the selection of the number and/or type of service for all loads in excess of 50 kW; and all loads involving space heating, cooking, air conditioning, water heating, process heating, snow melting and all fluctuating loads such as welders, x-ray machines, electric furnaces, etc. Industrial or commercial buildings to be electrically heated, in most cases, should be wired so the electric heating equipment along with any air conditioning and/or water heating can be separately metered from other electric uses on the premises.

# 112 FAULT CURRENT LEVELS FOR THE SELECTION OF PPE

Although the exact amount of fault current cannot be known for a particular installation, the Company will furnish the data for calculation. Upon request, the Company will furnish the X & R values, size of the transformer, and the size and type of the primary source fuse. If the service conductors are owned by the Company, their size and material will also be provided. The fault current and Thevenin equivalent impedance will not be provided. The Company does not provide minimum fault current information or associated protective device clearing times.

To request this information, please submit a written request to the Customer Projects Engineering Person shown on drawing GB0-100. Also, allow ample time for the information to be gathered and returned to you.

# **Disclaimer**

The Indianapolis Power & Light Company shall not be liable for any errors, inaccuracies or delays in content, or for any actions taken in reliance thereon. The Indianapolis Power & Light Company expressly disclaims all warranties, expressed or implied, as to the accuracy of any the content provided, or as to the fitness of the information for any purpose.

Although the Indianapolis Power & Light Company makes every reasonable effort to obtain reliable information and proper calculations, the Indianapolis Power & Light Company provides no warranty, expressed or implied, as to the accuracy, reliability or completeness of furnished data past the time of gathering data for the calculations to be made. The Indianapolis Power & Light Company power grid is a dynamic power system that changes from moment to moment as demands are made to the system. Furthermore, permanent changes to the system are common which will change the information provided and the Company will not notify the customer when such changes occur.

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# Page 4 is replaced with Page 4A and 4B

### 125 <u>HEIGHT OF SERVICE DROP</u>

The point of attachment of the service drop shall be a minimum of 13.5 feet and a maximum of 22 feet above ground, and in all cases be of such height as to provide at least the minimum clearances at any point for the service drop as required by the National Electrical Safety Code.

The clearance of the service drop shall be maintained in all cases of grade changes and/or the installation of swimming pools, decks, room additions, outbuilding, etc. Clearance requirements for swimming pools are much greater than for normal grade and in many cases the service drop must be converted to an underground service lateral (see Section 117) in order to meet the NESC requirements.

### 127 <u>UNDERGROUND SERVICE LATERAL WITHIN 5 FEET OF A POOL</u>

Where a service lateral is within 5 feet of a pool, the service lateral shall be relocated to be 5 feet or further from the pool and apron/deck. The customer will be charged for any modifications to their service laterals. Additionally, the customer will always be responsible for the replacement of the meter fitting, trenching, backfill, furnishing and installing any required conduit, and repair of the landscape.

Where 5 feet cannot be obtained, the customer may install Schedule 40 PVC conduit with a minimum of 18 inches of cover under the apron/deck of the pool but IPL prohibits the installation of the cable under any part of the pool itself. This conduit shall extend a minimum of 5 feet past the edge of the pool and 2 feet past the apron/deck.

### 130 <u>LENGTH OF SERVICE DROP</u>

The length of the service drop from pole to point of attachment on the building or other structures shall not exceed 125 feet, in many cases it may need to be considerably shorter.

### 135 <u>EXTENSION OF LINES</u>

Where there is a reasonable prospect that capital expenditure is warranted, the Company will extend its lines and service facilities in accordance with the conditions set forth in its Rules and Regulations. All applications for line extensions shall be referred to the appropriate Engineering Division. (See maps in front of book for jurisdiction.)

### 140 EASEMENT - RIGHTS-OF-WAY - TREE TRIMMING

Line extensions are contingent upon assistance by the applicant in securing the necessary easements, rights-of-way, and tree trimming permits. The Company shall be under no obligation to start construction until satisfactory easements, rights-of-way, and tree clearances have been obtained.

### 142 <u>RIGHT TREE RIGHT PLACE</u>

Misplaced or improperly maintained trees can cause power outages during severe weather. You can help prevent power outages by using the following guidelines to plant your trees. For information about planting the right tree in the right place, please download this brochure.

The normal clearance that must be maintained from transformers and equipment is ten feet. Lesser clearances are permitted to some parts of transformers and equipment. Plant large trees (those that will become 40 feet tall or more at full maturity) at least 50 feet away from overhead distribution lines. Plant smaller trees (those that will be less than 25 feet tall at full maturity) at least 10 feet away from the lines. These are general guidelines and will not apply in all circumstances.

Contact the Company at 261-8027 before considering planting near transmission towers or easements. The Company will remove any trees or shrubs that are not compatible with transmission lines.

### 145 <u>AUTOMATIC RECLOSING EQUIPMENT</u>

The Company has equipment installed at its substations, which provide rapid opening and automatic reclosing of its distribution circuits to clear temporary faults that occur on the circuits. It is the responsibility of the customer to provide adequate protection for all electrical apparatus of the customer that might be adversely affected by the Company's reclosing equipment.

### 147 <u>SINGLE PHASE PROTECTION</u>

It is the customer's responsibility to provide and maintain protection for multi-phase equipment that may be adversely affected by a loss of phase condition. The Company assumes no liability for equipment damaged by a loss of phase condition.

### 148 PHASE REVERSAL PROTECTION

It is the customer's responsibility to provide and maintain protection for multi-phase equipment that may be adversely affected by a phase reversal condition. The Company assumes no liability for equipment damaged by a phase reversal condition.



#### LETTER IN-LIEU OF ELECTRICAL INSPECTION

(May ONLY be used for State of Indiana buildings, Federal buildings, services on railroad property, or where the authority having jurisdiction is not under the authority of the Indiana Fire Prevention and Building Safety Commission. This is not for the use of the "log cabin" statute, Indiana Code 36-7-8-3 in the State of Indiana law.)

Customer or Project Name:
---------------------------

Service Address:

City / Town:

### IMPORTANT NOTICE

It is the customer's responsibility to assure that all facilities on the customer's side of the point of delivery of electricity are maintained in safe operating condition. This responsibility includes assuring that the customer's electrical facilities comply with all local construction codes and safety standards. Customers should coordinate this responsibility with their architectural and engineering consultants, construction contractors, or subcontractors, as appropriate, before their electrical systems are energized. Failure to do so may result in injury or damage resulting from unsafe conditions. The Indianapolis Power & Light Company is not responsible for unsafe or non-compliant conditions on the customer's side of the service point.

### **Customer's Certification of Readiness**

The undersigned customer or its authorized representative do hereby certify to Indianapolis Power & Light Company and agree that:

- 1. he has read the foregoing notice and fully understand the customer's obligations for operating safety;
- he has conferred with the architect, engineering consultant, general contractor, or subcontractor(s), as applicable and appropriate, responsible for the design and construction of the facilities, to verify that the electrical systems on the customer's side of the point of delivery have been constructed to the best of their knowledge in compliance with local construction and safety standards (including, for example, the Indiana Electrical Code);
- 3. he has determined and confirmed to the best of their knowledge that the electrical systems do in fact comply with these local construction and safety standards;
- 4. he understands and agrees that in reliance of these representations, Indianapolis Power & Light Company has agreed to energize electric service to the customer's service entrance section at such facilities;
- 5. he assumes full responsibility for any and all damages and injuries that may occur to the customer's property, employees or members of the public or other third parties as a result of conditions on the customer's side of the point of delivery at the service address noted above; and
- 6. he hereby releases Indianapolis Power & Light Company from any and all damages, or injuries that may result as a result of the electric service provided by the Indianapolis Power & Light Company provided that the service meets the applicable requirements of the National Electrical Safety Code (NESC) and the standards of the Indiana Utility Regulatory Commission.

If not the owner/customer, I certify that I have the owner/customer's permission to act in his stead.

Customer/Representative	Signature:
Customer/Representative	Name:
Business Name:	
Business Address:	
Telephone Number:	

### 225 <u>COVERING, ENCLOSING AND PAINTING OF PAD MOUNTED EQUIPMENT</u>

Pad mounted equipment (transformers, switchgear, metering, etc.) shall not be covered or enclosed with any material unless permission is specifically given in writing by the Indianapolis Power & Light Company Standards, Code Compliance & Quality Control Department. Fencing may be installed if sufficient clearance is provided around the equipment for switching with the use of "hot sticks". This requires 10 feet of clearance on the sides where switching is performed. Additionally, 3 feet of clearance is required on the remaining sides and back for ventilation and personnel access (for clearance to building walls, see drawings GB7-020, GB7-030, and GB7-040). The top of the enclosure shall remain open for adequate ventilation. These requirements prohibit the installation of hollow decorative "rocks" or other enclosures that prohibit the free flow of air around the equipment. Any enclosure or fencing shall not have a locked gate nor be over 6 feet in height. Painting of the equipment is permitted if a solid color is used and the decals are not painted over; however, black or essentially black paint is not permitted due to excessive equipment heating.

### 230 <u>METERING ENCLOSURE GROUNDING BEHIND SERVICE DISCONNECTING</u> <u>MEANS</u>

Metering enclosures and fittings shall be grounded in accordance with Article 250 of the Indiana Electrical Code.

Where Indiana Electrical Code Section 250.142(B) Exception 2 is not permitted or used, a grounding conductor shall be run from the service grounding electrode conductor and grounded service conductor at the service equipment to the meter fitting or meter cabinet. This grounding conductor shall be copper and sized and installed in accordance with the Indiana Electrical Code requirements for grounding electrode conductors.

### 235 <u>480 V COLD SEQUENCE METER</u>

An individual lockable main service disconnecting means with overcurrent protection shall be installed ahead of and within five feet of each 480 volt meter. No tap shall be permitted on the line side of the main service. This applies to all 480 volt services, 225 ampere and smaller, and metered feeders. See Section 555 for accessing locked and/or sealed equipment.

### 555 MAINTAINING METER SECURITY

A. It is unlawful to break seals and/or locks on Company meters or to remove meters without notifying the Service Connection Division on telephone number 261-8133.

Cooperation will be extended at the request of the customer for normal maintenance or under emergency conditions. Request shall be made to the Service Connection Division for these cases.

- B. The Company reserves the right to seal all meters, metering equipment and fused or unfused switches, together with any enclosures, gutters or raceways containing unmetered circuits, whether any of such equipment has been furnished by the Customer or the Company. This is reflected in the "<u>Rules and Regulations</u>, <u>Section 17.2</u>" that are approved by the Indiana Utility Regulatory Commission.
- C. Electricity used on construction services must be metered. Services that have been disconnected by the Company are to be restored only by the Company. Unmetered circuits and jumpered meter fittings will be disconnected and an energy diversion charge and pro-rated billing will be assessed.

# 557 <u>INSTALLATION OF TRANSIENT VOLTAGE SURGE SUPPRESSOR AND</u> <u>OTHER DEVICES AT METER SOCKETS</u>

The installation of any meter adapter surge suppressor or any similar interface devices between the meter and meter socket is not acceptable and prohibited. If any surge suppressor or other similar interface device such as a generator connection, is found installed between the meter and meter fitting, Company field personnel will remove the device.

# 560 <u>GENERAL REQUIREMENTS</u>

- A. A signed sketch shall be provided for all current transformer rated metering installations by customer's electrical contractor. The sketch shall include location of metering and all distances from windows, doors, gas meters, stairways, corners of buildings and posts if required.
- B. This sub-section has been removed with no substitution.
- C. To provide adequate clearance for testing and maintenance, a conduit nipple (a minimum of 4 inches long) shall be provided between the meter fitting and any other electrical equipment.
- D. Facilities to accommodate socket type meters installed at any location served by two phases and a neutral of the three phase, four wire 120/208 volt, wye system, shall be equipped with a neutral terminal block. Neutral terminal block (fifth terminal) shall be furnished by the Company and installed on the left side of fitting by the electrical contractor. (See Drawing GB1-060.)
- E. A maximum of 4 conductors may be connected to the line or load side of the current transformer.









