

COMMERCIAL ELECTRICAL INSPECTION CHECKLISTS

The following checklist provides assistance in determining an Electrical code review and inspection checklist for low rise commercial buildings with mixed use occupancies. Use groups R-2, A, B located in 1 single structure based on the approval of the 2018 CT state building code. References are based on the NEC 2017, IBC 2015, IECC 2015 and the A117.1 2009 and the 2018 CT supplement publications. Please use your personal code publications when using our checklist. * *Note: These items included in the checklist are non-inclusive and are to serve as a guide or basis for inspection.*

Thank you CENA LLC.

UNDERGROUND INSPECTION CHECKLISTS

Underground Inspections				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Determine which installations or portions of the installations are covered by NEC rules	90.2(A) and (B)	
	2.	Verify equipment is listed and installed in accordance with manufacturer's installation instructions	90.7 and 110.3(B)	
	3.	Verify which wiring method is used and it is listed for the purpose. Encasement or embedded!	110.8, 110.3(B), Chapter 3	
	4.	Verify floor boxes are listed for the purpose	314.27(C), 110.3(B)	
	5.	Verify wiring method burial depths in accordance with Table 300.5 or Table 300.50	300.5, Table 300.5, 300.50, T. 300.50	
	6.	Check for maximum number of bends not to exceed 360 degrees. Inspect before wiring pulling.	Applicable wiring method article (.26)	
	7.	Verify if concrete-encased electrode and other electrodes are present either horizontal or vertical	250.50, 250.52(A)(3)	
	8.	Handhole enclosures to be designed and installed to withstand any loads likely to be imposed and they shall be identified for use in underground systems. Tier rating?	314.30	
	9.	Check for corrosion protection of metal conduit or boxes. Is coating necessary	300.6, 110.11	
	10.	Verify feeder conduit sizes in accordance with single line drawings	Chapter 3, Table 1, Chapter 9	
	11.	Check any underground cable installed for suitability	Chapter 3, 110.8, 110.3(B), 300.5(B), (C), and (D)	
	12.	Check direct buried conductors or emerging cables are protected from physical damage	300.5(D)	

GENERAL INSPECTION CHECKLISTS

General Requirements				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Determine which installations or portions of the installations are covered by NEC rules	90.2(A) and (B)	
	2.	Verify equipment is listed and installed in accordance with manufacturer's installation instructions and suitable for the location.	90.7, 110.3(B), 110.20, Table 110.20	
	3.	Identify any special equipment or systems that require special approvals or evaluations	90.4, 90.7, 110.2, 110.3	
	4.	Verify service and distribution equipment has sufficient interrupting ratings for AFC (available fault current) and system is fully rated	110.9, 110.10	
	5.	Is service and distribution equipment being installed as a fully rated system or as a series combination rated system?	110.9, 110.10, 240.86	
	6.	Check for electrical enclosures and boxes with unused openings. Verify closure of raceway and cable openings	110.12(A), 408.7	
	7.	Verify equipment has not been contaminated by foreign materials or is not damaged	110.12(B)	
	8.	Verify equipment is securely mounted and adequate ventilation and space for the equipment is provided	110.13	
	9.	Check electrical splices and equipment terminations	110.14(A) and (B)	
	10.	Check temperature ratings of terminations	110.14(C)	
	11.	Check for arc flash warning labels and locations of labels	110.16	
	12.	Check for minimum working spaces at electrical equipment. Verify working space is not used for storage	110.26(A), (B), (E), 110.34(A)	
	13.	Check the space above and below equipment for no foreign equipment (<i>Dedicated Equipment Space</i>)	110.26(F)	
	14.	Verify entrance and egress to work spaces. Any personal doors to or within 25 ft. of working space requires panic hardware and must open in the direction of egress.	110.26(C), 110.26(C)(3), 110.33	
	15.	Verify illumination is provided for equipment	110.26(D), 110.34(D)	
	16.	Check for circuit directories, and identification of disconnecting means	110.22, 408.4	

ROUGH CEILINGS INSPECTION CHECKLISTS

Rough Wall Inspections (cont.)				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Verify the wiring method is suitable for the use based on the uses permitted section of the applicable article.	Chapter 3 wiring methods	
	2.	Verify equipment is listed and installed in accordance with manufacturer's installation instructions	90.7 and 110.3(B) 110.20	
	3.	Check wiring methods (usually conduit and flexible metal conduit) for support and suitability for the conditions.	Chapter 3 and Article 300, 300.11	
	4.	Check box accessibility, mounting, and length of free conductors	314.29, 300.14	
	5.	Check for proper box sizes, fill capacity, and locations	300.15, 314.16(A) and (B),	
	6.	Verify adequate conduit or tubing sizes for fill capacity	300.17, Chapter 9, Tables	
	7.	Check for suitable box supports	314.23, 300.11	
	8.	Verify boxes are roughed in a manner that will result in flush outlet boxes to wall surfaces	314.20, 314.19	
	9.	Verify conductors entering boxes are protected from abrasion	314.17	
	10.	Verify pull and junction box sizes for 4 AWG or larger	314.28	
	11.	Verify metal boxes are grounded in accordance with Article 250	314.4	
	12.	Verify that cables are secured to the cabinet, cutout box, or meter socket enclosure	312.5(C)	
	13.	Verify that all unused openings are effectively closed	110.12(A), 314.17(A)	
	14.	Check for proper physical protection for wiring methods installed in framing members	300.4	
	15.	Verify all conductors of the circuit are routed with each other	300.3(B)	
	16.	Verify that wiring methods are continuous from outlet to cabinets, boxes, or other enclosures	300.12, 300.18	
	17.	Verify mechanical and electrical continuity of conductors	300.13(A) and (B)	
	18.	Verify continuity of metal raceways and enclosures	300.10	
	19.	Check for required applicable fire rated caulking and penetrations	300.21	
	20.	Check for proper boxes where barriers are needed between 277-volt switches and receptacles or other adjacent devices where voltage between <u>switch</u> terminals exceeds 300 volts.	404.8(B) 406.4(G)	
	21.	Verify applicable ADA switch, receptacle mounting heights	ANSI 117	
	22.	Verify mounting of flush panelboards, boxes and enclosures with no more than 1/8 in. gap.	312.3, 314.20, 312.4	
	23.	Check conductor sizes for capacity and overcurrent protection	310.15, 310.16, 240.4	
	24.	Verify the installation matches the engineered drawings if applicable	Local Code	

ROUGH CEILINGS INSPECTION CHECKLISTS

Rough Ceiling Electrical Inspections				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Determine which installations or portions of the installations are covered by which NEC rules (type of occupancy, etc.)	90.2(A) and (B)	
	2.	Verify equipment is listed and installed in accordance with manufacturer's installation instructions	90.7 and 110.3(B)	
	3.	Check wiring methods (usually cable, conduit, or flexible metal conduit) for support and suitability for the conditions.	Chapter 3 and Article 300, 300.11	
	4.	Verify the wiring method is suitable for the use based on the uses permitted section of the applicable article.	Chapter 3 wiring methods	
	5.	Check for proper box sizes and fill capacity and locations	300.15, 314.16(A) and (B),	
	6.	Verify adequate conduit or tubing sizes for fill capacity	300.17, Chapter 9, Tables	
	7.	Check for suitable box supports	314.23, 300.11	
	8.	Verify boxes are roughed in a manner that will result in flush outlet boxes to wall surfaces	314.20, 314.19	
	9.	Verify conductors at entering boxes are protected from abrasion	314.17	
	10.	Verify pull and junction box sizes for 4 AWG or larger	314.28	
	11.	Verify metal boxes are grounded in accordance with Article 250	314.4	
	12.	Verify that cable entries into flush cabinets are effective and closed	312.5(C)	
	13.	Verify that all unused openings are effectively closed	110.12(A), 314.17(A)	
	14.	Check for proper physical protection for wiring methods installed in framing members and other locations	300.4	
	15.	Verify all conductors of the circuit are routed with each other	300.3(B)	
	16.	Verify that wiring methods are continuous from outlet to enclosure	300.12	
	17.	Verify mechanical and electrical continuity of conductors	300.13(A) and (B)	
	18.	Verify continuity of metal raceways and enclosures	300.10	
	19.	Verify raceways are complete between enclosures, boxes, etc.	300.18	
	20.	Check for required applicable fire rated caulking and penetrations	300.21	
	21.	Check conductor sizes for capacity and overcurrent protection	310.15, 310.16, 240.4	
	22.	Verify the installation matches the engineered drawings if applicable	Local Code	
	23.	Verify luminaires are securely fastened to ceiling grid or structure	410.36(C), 410.30	
	24.	Verify clearances from thermal insulation and combustible materials are adequate	410.116	

ROUGH CEILINGS INSPECTION CHECKLISTS

Rough Ceiling Electrical Inspections (cont.)				
	Item	Inspection Activity	NEC Reference	Comments
	25.	Verify all electrical boxes and enclosures are covered and accessible	314.25, 314.29	
	26.	Verify limited energy system cabling is securely supported to the building structure in a workmanlike manner	725.24, 760.24, 770.24, 800.24, 820.24, 830.24	
	27.	Verify local disconnecting means for indoor florescent luminaires	410.130(G)	
	28.	Check to see that luminaires are listed (if installed on ceiling rough, typically not installed until final inspection)	410.6	
	29.	Verify cables and wiring methods in air handling spaces are suitable for the purpose and listed	300.22, 725.154, 760.154, 760.176, 770.154(A), 800.154(A), 820.154(A), 830.154(A)	
	30.	Verify emergency system enclosures (junction boxes are readily identified and in separate wiring methods (if applicable)	700.9(A), 700.9(B)	
	31.	Track lighting supported properly	410.151(D), 410.154	
	32.	Verify disconnect means and locations for equipment above suspended ceilings	440.14, 430.102, 422.31	
	33.	Check to be sure all temporary wiring is disconnected and removed	590.3(D)	
	34.	Verify that no flexible cords are installed above suspended ceiling.	400.8	
	35.	Verify minimum 1½ in. spacing between metal-corrugated sheet roof decking and conduits or cables	300.4(E)	

BRANCH CIRCUITS INSPECTION CHECKLISTS

Branch Circuit Electrical Inspections				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Verify type of occupancy and wiring methods are suitable for that type of occupancy	Chapter(s) 3 and 5	
	2.	Check for proper sizes of branch circuits	210.19, 310.16, 240.4(D)	
	3.	Verify proper sizes for branch circuit overcurrent protection, overcurrent device rating and interrupting rating	210.20, 240.4, 408.30, 110.9, 110.10, 240.86	
	4.	Check for individual and multiple outlet branch circuits ratings	210.3, 210.23	
	5.	Verify the continuous loads and the noncontinuous loads and the circuit sizes	210.19, 210.20, 310.15	
	6.	Verify the branch circuit loads do not exceed the maximum loads allowed	220.10 thru 220.14, 220.18	
	7.	For motors and HVAC equipment verify the branch circuits meet the requirements in Article 430 and 440	240.14(C), 430.22, 430.24, 440.31 thru 440.35	
	8.	Check that the loads on the circuit does not exceed the circuit rating	210.23	
	9.	Verify that the branch circuits are enough for the load served and the load is evenly distributed	210.11	
	10.	Check that the branch circuits for specific loads meet the requirements of that particular article	210.2	
	11.	Verify multiwire branch circuits for proper use and identification	210.4, 210.5	
	12.	Verify simultaneous disconnects for all multiwire branch circuits	210.4(B)	
	13.	Verify grouping of multiwire branch circuits in at least one location within the panelboard.	210.4(D)	
	14.	Check for lighting and receptacles at mechanical equipment locations	210.63, 210.70(C)	
	15.	Check for required location of outlets at show windows and signs	210.62, 600.5(A), 220.14(G) and (F)	

BRANCH CIRCUITS INSPECTION CHECKLISTS

Branch Circuit Electrical Inspections (cont.)				
	16.	Verify that receptacles are provided for any cord- and plug-connected equipment	210.50, 400.7, 400.8	
	17.	Check for GFCI protection in bathrooms, kitchens, rooftops, outdoors, and sinks	210.8(B)	
	18.	Check for GFCI protection for pools, vending machines, and drinking fountains.	Article 680, 422.51, 422.52	
	19.	Check for disconnects in branch circuits supplying other buildings or structures	Article 225, Part II	
	20.	Check for outside branch circuits overhead clearances and sizes	225.6, 225.18, 225.19	
	21.	Verify that proper identification is used for grounded (usually neutral) conductors	200.6(A) and (B)	
	22.	Verify that different means of identification where more than one nominal voltage system is used and the two systems occupy the same raceways or enclosures	200.6(D), 210.5(C)	
	23.	Verify no overcurrent device is inserted in any grounded conductor	240.22	
	24.	Verify identification means for ungrounded branch circuit conductors has been established and posted where wiring system is supplied by more than one nominal voltage system	210.5(C)	
	25.	Verify that any branch circuit conductors installed on or above rooftops are derated for ampacity	310.15(B)(2)(c), T. 310.15(B)(2)(c)	

CIRCUITS EQUIPMENT GROUNDING INSPECTION CHECKLISTS

Circuits Equipment Grounding and Bonding				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Verify which equipment is required to be grounded	250.110, 250.112, 250.114, 250.116	
	2.	Check for appropriate grounding methods for equipment	250.134, 250.136, 250.118	
	3.	Verify types of equipment grounding conductors used	250.118	
	4.	Check separate equipment grounding conductor for proper sizing (voltage drop, etc.)	250.122	
	5.	Check load side equipment bonding jumper sizes	250.102(D)	
	6.	Verify proper identification of equipment grounding conductors (wires)	250.119	
	7.	Verify equipment grounding conductor connections within boxes	250.8, 110.3(B), 250.146, 250.148	
	8.	Verify proper bonding of grounding type receptacles	250.146, 250.8, 110.3(B), 250.146	
	9.	Check for equipment grounding terminal bars in panelboards and equipment	408.40, 250.8	
	10.	Verify grounding and bonding methods at separate buildings or structures	250.32(B)(1), <u>250.32(B)(2)</u>	
	11.	Check method of grounding for ranges and dryers	250.140, 250.142	
	12.	Verify proper connections of isolated, insulated equipment grounding conductors	250.146(D), 250.4(A)(5), 406.2(D), 408.40 Ex., 250.96(B)	
	13.	Verify any auxiliary electrodes are not used as the ground fault current return path	250.54, 250.4(A)(5), 250.4(B)(4)	

CIRCUITS EQUIPMENT GROUNDING INSPECTION CHECKLISTS

Circuits Equipment Grounding and Bonding (cont.)				
	Item	Inspection Activity	NEC Reference	Comments
	14.	Check metal sheath and raceway bonding for circuits with a phase to ground voltage exceeding 250.	250.97	
	15.	Verify copper and aluminum listed connections	110.3, 110.14, , 250.8	
	16.	Verify any special equipment grounding and bonding requirements (<i>swimming pools, elevators, etc.</i>)	250.3, Articles 680, 600, 620, etc.	
	17.	Verify equipment grounding conductor qualifies as an equipment grounding conductor	250.118	
	18.	Verify isolated insulated equipment grounding conductors are installed to meet the requirements	250.146(D), 406.2(D), 408.40 Ex., 250.96, 250.4(A)(5), 250.54	
	19.	Check any limited energy system bonding and grounding requirements	800.100, 810.21, 820.100, 830.100, 250.94	
	20.	Verify intersystem bonding termination at service equipment or separate building or structure	250.94	

SERVICE INSPECTION CHECKLISTS

Service Inspections (cont.)

	Item	Inspection Activity	NEC Reference	Comments
	1.	Determine each building has one service or more as allowed by justified provisions	230.2	
	2.	Check that each service drop or lateral supplies one set of service conductors	230.40	
	3.	Verify that the service conductors are sized per minimum requirements, and large enough to serve the calculated load.	230.23(B, 230.31(B), 230.42	
	4.	Verify that service entrance conductors are listed or marked as being sunlight resistant or covered.	310.8(C)	
	5.	Verify clearances for overhead service drop conductors	230.24	
	6.	Verify the point of attachment is adequate	230.26, 230.27	
	7.	Verify that if the service mast is used to support the drop, it only supports the electrical service conductors and is adequate for this purpose.	230.28	
	8.	Verify depths for buried service lateral conductors	230.32, 230.49, 300.5, 300.50	
	9.	Check wiring methods for the service conductors	230.43	
	10.	Verify service weather head locations and raceways are suitable for wet locations and arranged to drain	230.53, 230.54	
	11.	Check that service equipment is suitable for the use as service equipment and identified as such	230.66	
	12.	Check the size of the service conductors	230.23, 230.31, 230.42, 230.202	
	13.	Verify that a service disconnect is provided, located properly and readily accessible	230.70, 230.204, 230.205, 240.24	
	14.	Verify overcurrent devices are not located where they are in the vicinity of easily ignitable materials or over steps or stairways	240.24(D) and (F)	
	15.	Check the overcurrent protection at the load end of the service-entrance conductors	230.90, 230.91, 230.208	

SERVICE INSPECTION CHECKLISTS

Service Inspections (cont.)				
	Item	Inspection Activity	NEC Reference	Comments
	16.	If multiple service disconnects are used, verify no more than six and that they are grouped together	230.71, 230.72, 230.204, 230.205	
	17.	Generally, service equipment must be readily accessible and installed so that the center grip of the operating handle, when in its highest position, is not more than 2.0 m (6 ft 7 in.) above the floor or working platform	240.24(A)	
	18.	Check the service disconnect ratings. Amperage, voltage, Phase and AIC rating.	230.79, 230.80, 230.205, 110.9	
	19.	Verify any equipment connected to the supply side of the service disconnect is permitted on supply side	230.82	
	20.	Verify service disconnect identification	230.70(B) and (C)	
	21.	Is equipment protected from physical damage?	110.27	
	22.	Verify GFPE is provided where required for the service	230.95	
	23.	If GFPE is present in the service equipment, verify performance testing completed prior to energizing	230.95(C)	
	24.	Are barriers provided that isolate the service busbars from inadvertent contact when reaching load terminals?	408.3(A)(2), 408.3(D)	
	25.	Check for a neutral disconnecting means (neutral disconnect link)	230.75	
	26.	Verify service circuit breakers 1200 amps and larger are provided with energy reduction maintenance feature. RELT	240.87	
	27.	Verify interrupting ratings of all overcurrent devices and fully rated systems. Verify if series combination ratings are permitted using either a breaker to breaker system or a fuse to breaker combination.	110.9, 110.10, 240.86 Manufactures installation instructions	
	28.	Verify field markings on equipment for series combination rated systems	110.22(C)	
	29.	Verify selective coordination of elevator, emergency, and legally required standby system supply side overcurrent devices	620.62, 700.27, 701.18, 708.54, 517.30(B)(2)	
	30.	Verify only service entrance conductors are installed in the service raceway	230.7	

SERVICE GROUNDING INSPECTION CHECKLISTS

Service Grounding and Bonding				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Verify grounding requirements or specifications of any engineered drawings	None, but may be a local rule or regulation	
	2.	Verify the size of the service based on the plans or by the equipment labels	Based on the blueprints or load served 220.10, 230.42, 230.79	
	3.	Determine all available grounding electrodes based on the construction and plans	250.50, 250.52(A)	
	4.	Determine other electrodes required to be used and bonded to the grounding electrode system	250.52(A)(4) through (7)	
	5.	Verify grounding electrode conductor(s) are properly sized	250.66, 250.64(F)	
	6.	Verify that bonding jumpers connecting grounding electrodes together to form the grounding electrode system are sized properly	250.53(C)	
	7.	Check that grounding electrode conductor(s) is installed without a splice	250.64(C), 250.64(F)	
	8.	Verify grounding electrode conductor is securely fastened and protected from physical damage	250.64(B)	
	9.	Verify metal enclosures or raceways for grounding electrode conductors are bonded to the grounding electrode conductor at both ends of same	250.64(E)	
	10.	Check for correct size, installation, and types of rod, pipe, or plate electrodes	250.52, 250.53(G)	
	11.	Verify accessibility of grounding electrode conductor connections	250.68(A)	
	12.	Check grounding electrode conductor connections including buried connections	250.70, 250.68, 110.3(B)	
	13.	Verify metal water piping system(s) are bonded	250.104(A)	
	14.	Verify metal building framing is bonded	250.104(C)	

SERVICE GROUNDING INSPECTION CHECKLISTS

Service Grounding and Bonding (cont.)				
	Item	Inspection Activity	NEC Reference	Comments
	15.	Check sizes of water piping bonding jumpers	250.66, 250.68(B), 250.104(A)	
	16.	Verify other metal piping systems are bonded	250.104(B)	
	17.	Verify other metal piping system bonding jumper sizes	250.104(B), 250.122	
	18.	Verify bonding jumpers installed around fittings and water meters, etc. and proper size	250.68(B), 250.66	
	19.	Check the connection, size, and type of main bonding jumper in the service disconnect	250.28, 250.24(A)(4), 250.24(B)	
	20.	Verify enclosures and raceways containing service-entrance conductors are bonded properly	250.92(A), 250.92(B), 250.102, 250.190	
	21.	Check supply side equipment bonding jumper sizes	250.102(C)	
	22.	Verify service grounded conductor is sized properly or by minimum requirements	250.24(C), 220.61, 250.66	
	23.	Verify identification for grounded conductor at service	200.6(B)	
	24.	Verify grounding and bonding connections are tight and made with equipment listed as grounding and bonding	110.12, 110.14, 250.8, 250.96	

FEEDER INSPECTION CHECKLISTS

Feeders				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Are feeders sized to meet the loading requirements	215.2, 215.5, 220.40, 220.61	
	2.	Verify panel schedules for panelboard and distribution equipment ratings based on single line drawings	215.5, 215.2	
	3.	Check feeder wiring methods for suitability	Chapter 3 and 5	
	4.	Verify any feeder GFPE requirements have been met	215.10, 230.95, 240.13	
	5.	Check for feeder disconnects at separate buildings	Article 225, Part II, 225.32	
	6.	Verify separate building disconnects meet the location and grouping provisions of Article 225, Part II	Article 225, Part II	
	7.	Proper wiring methods used for outside feeders	225.10, 225.20 thru 225.22	
	8.	Verify wiring methods for feeders are continuous from enclosure to enclosure	300.10	
	9.	Verify size of feeder equipment grounding conductors	250.122	
	10.	Check for feeders that are installed as taps for meeting the restrictions for tap conductors	240.21, 240.4(E) and (F)	
	11.	Verify feeder conductor in wet locations are listed for wet location applications	310.8(C), 110.3(B)	
	12.	Verify proper overcurrent device for feeders applied in series rated combination systems	240.86, 110.22, 110.3(B)	
	13.	Verify panelboards supplied by feeders have proper overcurrent protection	408.36(A) and (B)	
	14.	Check that overcurrent protection devices protect the feeder conductors and the equipment at the load end of the feeder.	240.4	
	15.	Verify the identification means for feeder grounded conductors	200.6	

FEEDER INSPECTION CHECKLISTS

Feeders (cont.)				
	Item	Inspection Activity	NEC Reference	Comments
	16.	Verify that different means of identification for feeders where more than one nominal voltage system is used and the two systems occupy the same raceways or enclosures	215.12(A)	
	17.	Verify that no overcurrent device is inserted in a feeder grounded conductor	240.22	
	18.	Verify there are no grounding connections to a grounded conductor on the load side of the service disconnecting means	250.24(A)(5), 250.142(B)	
	19.	Check for proper terminations of grounded (neutral) conductors on neutral terminal bus in panelboard (only one per terminal)	408.41	
	20.	Verify parallel conductor installations meet all of the requirements for parallel conductors	310.4	
	21.	Verify any required GFPE equipment is installed and has been performance tested prior to energizing	215.10, 240.13, 230.95(C), 517.17	
	22.	Verify identification scheme for ungrounded feeder conductors has been established and posted where wiring system is supplied by more than one nominal voltage system	215.12(C)	
	23.	Busways installed as feeders pass through walls and floors Curbing through floors. Reduction in amperage and proper use of plug in switches. Supporting by code or manufacture	368.10, 368.17(C), 368.30	

TRANSFORMERS INSPECTION CHECKLISTS

Transformer Inspections				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Check wiring methods (usually conduit and flexible metal conduit) for support and suitability for the conditions.	Chapter 3 and Article 300, 300.11	
	2.	Verify the transformer installation covered by Article 450	450.1, 450.2, 90.2	
	3.	Verify overcurrent protection for over 600 volt transformers is in accordance with 450.3(A)	450.3, 450.3(A) and notes, Table 450.3(A)	
	4.	Verify overcurrent protection for transformers 600 volts or less is provided and properly sized	450.3, 450.3(B), Table 450.3(B)	
	5.	Verify conductor sizes on the primary and secondary	240.4, 310.15, 310.16	
	6.	Verify compliance with applicable secondary tap rules	240.21(B) and (C)	
	7.	Check overcurrent protection for protection of conductors	240.4, 240.6, 240.21(B) and (C), 240.100, 310.16	
	8.	Verify clearances and working space around transformer and specifically ventilating openings in accordance with markings	450.9, 110.3(B), 110.26	
	9.	Verify transformer is readily accessible or complies with the hollow space or exposed locations provisions	450.13	
	10.	Verify transformers installed indoors meet the separation requirements or fire resistant room requirements	450.21	
	11.	Verify weatherproof enclosures are installed on outdoor dry-type transformers	110.3(B), 450.22	
	12.	Check for oil-filled transformer requirements such as separations, oil containment, etc.	450.23 thru 450.28	
	13.	Verify transformer vaults meet all of the conditions for construction of vaults.	450.41 thru 450.48	
	14.	Verify metal parts and enclosures associated with transformers are grounded. If transformer is a derived system, grounding in accordance with 250.30	450.10, 250.20, 250.30	
	15.	Verify any parallel conductors connected to transformers meet the requirements in Chapter 3	Article 300, 310.4, 250.122, 250.30(A)(5)	

TRANSFORMERS GROUNDING INSPECTION CHECKLISTS

Separately Derived System Grounding and Bonding				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Verify grounding requirements or specifications of any engineered drawings	None, but may be a local rule or regulation	
	2.	Verify the size of the system based on the plans or by the equipment labels	Based on the blueprints or load served 220.10	
	3.	Determine all available grounding electrodes based on the construction and plans	250.50, 250.52(A)	
	4.	Determine which electrode(s) required to be used (as near as practicable and in the same area	250.30(A)(7)	
	5.	Verify grounding electrode conductor(s) are properly sized	250.66, 250.30(A)(3)	
	6.	Verify that system bonding jumper is connected and sized properly	250.30(A)(1), 250.28, 250.66	
	7.	Check that grounding electrode conductor(s) is installed without a splice	250.64(C)	
	8.	Verify grounding electrode conductor is securely fastened and protected from physical damage	250.64(B)	
	9.	Verify Metal enclosures or raceways for grounding electrode conductors are bonded to the grounding electrode conductor at both ends of the enclosure or raceway	250.64(E)	
	10.	Verify any installed equipment bonding jumpers between source enclosure and first system overcurrent device enclosure sized properly	250.30(A)(2), 250.35, 250.66, 250.102(C) and (D)	
	11.	Verify accessibility of grounding electrode conductor connections	250.68(A)	
	12.	Insure that a grounding conductor that provides an effective ground-fault current path is installed with the supply conductors from a permanently installed generator(s) to the first disconnecting mean(s)	250.35	
	13.	Check grounding electrode conductor connections including buried connections	250.70, 250.68, 110.3(B)	
	14.	Verify metal water piping system(s) are bonded	250.104(A), 250.30(A)(7)	

TRANSFORMERS GROUNDING INSPECTION CHECKLISTS

Separately Derived System Grounding and Bonding (cont.)

	Item	Inspection Activity	NEC Reference	Comments
	15.	Verify metal building framing is bonded	250.104(C), 250.30(A)(6)	
	16.	Check sizes of water piping bonding jumpers	250.66, 250.68(B), 250.104(A)	
	17.	Check grounding and bonding connections in source enclosures and first device enclosure	250.8, 110.3(B), 250.90, 250.96	
	18.	Verify other metal piping system bonding jumper sizes	250.104(B), 250.122	
	19.	Check that the grounding electrode conductor and bonding jumper connections for the system are in the same location	250.30(A)(1). 250.30(A)(3)	
	20.	Check the connection, size, and type of system bonding jumper in the service disconnect	250.30(A)(1), 250.28	
	21.	Verify enclosures and raceways containing (tap) derived phase conductors are bonded properly	250.92(A) and (B)	
	22.	Check supply side equipment bonding jumper sizes.SSBJ	250.30(A)(4)	
	23.	Verify system grounded conductor is sized properly or by minimum requirements. White Neutral wire.	250.30(A)(8), 250.66, 220.61	
	24.	Verify identification for grounded conductor at source enclosure and first system overcurrent device enclosure	200.6	
	25.	Verify grounding and bonding connections are tight and made with equipment listed as grounding and bonding equipment	110.12, 110.14, 250.8, 250.96	
	26.	Verify the water piping in the area served by the derived system is bonded to the derived system	250.104(A), 250.30(A)(7)	

A/C INSPECTION CHECKLISTS

A/C and Refrigeration Equipment Inspections				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Check wiring methods (usually conduit and liquidtight flexible metal conduit) for support and suitability for the conditions.	Chapter 3 and Article 300, 300.11	
	2.	Verify that Article 440 is applicable to the equipment (the equipment incorporates a hermetic refrigerant motor compressor)	440.1, 440.2	
	3.	Verify there is applicable nameplate information provided for the equipment	440.4	
	4.	Verify the branch circuit conductor sizes are proper	440.31 thru 440.35	
	5.	Verify the conductors supplying multiple units are properly sized	430.24, 430.25, 440.35	
	6.	Verify branch circuit overload protection is provided and is sized properly	440.51 thru 440.55	
	7.	Verify the size of the branch circuit short-circuit ground-fault protection is properly sized. (Nameplate)	440.21, 440.22	
	8.	Verify short-circuit ground-fault protection is provided for feeders if applicable and is sized properly	430.61 thru 430.63	
	9.	Verify controllers have proper ratings where not supplied as an integral component of the equipment	440.41	
	10.	Check the ratings of disconnecting means for LRA and RLA values that meet the requirements	440.12, 440.13	
	11.	Verify disconnecting means locations and applicable working spaces are provided	440.14, 110.26	
	12.	Verify size and lengths of room air-conditioner cords	440.60 thru 440.64	
	13.	Verify that room air-conditioners are factory equipped with either LCDI or AFCI protection as part of the supply cord	440.65	
	14.	Verify service receptacles and appropriate lighting outlets and switches are provided	210.63, 210.70, 210.8(B) (GFCI)	
	15.	Verify equipment is listed and installed properly	90.7, 110.2, 110.3, 110.3(B)	

EMERGENCY SYSTEM INSPECTION CHECKLISTS

Emergency System Requirements				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Establish that Article 700 applies to the type of occupancy and electrical system	Applicable building code or local code and Article 700	
	2.	Review engineered drawings for specifications	Local Code(s) and 700.9(C)	
	3.	Determine the emergency system source to be used based the drawings and at a minimum	700.12	
	4.	Check equipment being used on emergency system for suitability	700.3, 110.3(A) and (B)	
	5.	Verify connected emergency system load and capacity of the emergency system	700.5, 220.10, 215.2	
	6.	Verify capacity meets load demand or load shedding is provided	700.5	
	7.	If generator is the source, verify onsite fuel is provided (for minimum 2-hours operation)	700.12(B)(2)	
	8.	Power sources are suitable for minimum 1-1/2 hours of operation and transfer is within 10 seconds. Level-Type-Class	700.12	
	9.	Verify unit equipment is connected to the proper lighting circuits. Battery pack units	700.12(F)	
	10.	Check for dimmer systems (listed for use in emergency systems) and ability upon power failure to illuminate selected emergency circuits	700.23	
	11.	Verify transfer equipment is suitable for the use and is automatic type	700.6	
	12.	Transfer equipment supplies only emergency loads and is listed for emergency systems	700.6(C) and (D)	
	13.	Determine if transfer switch creates a separately derived system	250.20(D),250.30(A)	
	14.	Emergency system branch circuit overcurrent devices accessible to authorized persons only	700.25	
	15.	Check for emergency system signage at service equipment (disconnecting means) location	700.8	
	16.	Check for feeder and branch circuit wiring separation from normal circuits	700.9	
	17.	Conduct a witness test of the system (loads connected)	700.4	

EMERGENCY SYSTEM INSPECTION CHECKLISTS

Emergency System Requirements (cont.)				
	Item	Inspection Activity	NEC Reference	Comments
	18.	Check all enclosures are identified as part of an emergency system. Labeling on all boxes and enclosures and raceways 25 feet apart.	700.9(A), 700.10	
	19.	Verify proper separation of emergency, legally required standby, and optional standby systems. Includes raceways, junctions, wireways.	700.9(B)(5)	
	20.	Verify required visible and audible emergency system status signals are provided and the location	700.7, 700.26	
	21.	Check for fire rated feeders in high-rise buildings and assembly occupancies over 1000 persons	700.9(D)	
	22.	Verify emergency branch circuits supply only emergency loads.	700.15	
	23.	Verify re-strike capabilities or provided illumination where HID lighting is used as the normal lighting (done usually during witness test)	700.16	
	24.	Check that areas in egress path will not be left in total darkness with the failure of a single lighting element	700.16	
	25.	Check any fire pump installations for compliance with Article 695 and NFPA 20	Article 695, NFPA 20	
	26.	Verify any switches located in emergency lighting circuits are accessible only to authorized persons	700.20, 700.21	
	27.	Verify if there will be continued occupancy when power Interruptions take place. Fire pumps require standby power when a code required standby system is present in the building.	CT state Amd 2702.2.17	

MOTOR INSPECTION CHECKLISTS

Electrical Motor Inspections				
	Item	Inspection Activity	NEC Reference	Comments
	1.	Check wiring methods (usually conduit and flexible metal conduit) for support and suitability for the conditions.	Chapter 3 and Article 300, 300.11	
	2.	Determine the FLA ratings of the motors from the Table values based on HP and voltage and number of phases	430.6, Tables 430.247 thru 430.251	
	3.	Verify branch circuit conductor sizes for single motors or multiple motors on the same circuit (125% of Table values)	430.22, 430.24	
	4.	Verify feeder sizes where multiple motors are installed on the feeder	430.24	
	5.	Verify short-circuit ground-fault protection for motor and motor branch circuit(s)	430.52, Table 430.52	
	6.	Verify short-circuit ground-fault ratings of motor feeders	430.61 thru 430.63	
	7.	Verify motor control circuit overcurrent protection	430.71 thru 74	
	8.	Verify motor control circuit disconnect and proper arrangement of control circuits is provided	430.74, 430.75	
	9.	Check the motor controller ratings	430.81 thru 430.91	
	10.	Verify the location of motor control centers and ratings	430.92 thru 430.98, 110.26	
	11.	Check the rating of the motor overload protection and compare to motor nameplate current values	430.6, 430.31, 430.32	
	12.	Verify the motor disconnecting means has proper ratings and is a suitable type	430.109, 430.110	
	13.	Verify location of motor controller disconnect(s) in sight from and readily accessible from the controller location and verify adequate working space is provided	430.102(A), 430.107, 110.26	
	14.	Verify motor disconnecting means is in sight from the motor location and has adequate working space or complies with the lockable disconnect provisions	430.102(B), 430.102(B) Ex	

Final Electrical Inspections

	Item	Inspection Activity	NEC Reference	Comments
	1.	Determine which installations or portions of the installations are covered by NEC rules	90.2(A) and (B)	
	2.	Verify equipment is listed and installed in accordance with manufacturer's installation instructions	90.7 and 110.3(B)	
	3.	Verify circuit directories and disconnecting means identification is provided	110.22, 408.4	
	4.	Verify GFCI protection at required locations	210.8(B), 422.51, 422.52	
	5.	Verify all covers installed and unused openings are closed	110.12(A)	
	6.	Verify all properly rated devices (switches and receptacles) are installed	210.21, 404.14, 406.2	
	7.	Check to see that all luminaires are listed.	410.6	
	8.	Verify weatherproof receptacle covers in place in damp and wet locations	406.8(A) and (B)	
	9.	Verify weather-resistant type receptacles are installed outdoors in damp and wet locations	406.8(A), 406.8(B)	
	10.	Check for GFPE test results (if applicable) Healthcare facilities (hospitals) require six-cycle separation	230.95(C) 517.17(C)	
	11.	Check for arc flash warning labels on applicable equipment enclosures	110.16	
	12.	Check for required service receptacle within 25 feet and on the same level as the equipment location	210.63	
	13.	Verify emergency system identification and witness testing is completed	700.4, 700.9	
	14.	Verify locations of HVAC equipment disconnecting means	440.14	
	15.	Verify locations of motor disconnecting means	430.102	
	16.	Verify correction factors have been applied to conductors installed on or above rooftops exposed to direct sunlight	310.15(B)(2)(c), 310.15(A)(2) <i>Exception</i>	
	17.	Verify field markings on equipment for series combination rated systems	110.22(C)	
	18.	Verify identification of circuit conductors permanently posted at each branch circuit panelboard or other distribution equipment with building is supplied by more than one nominal voltage system	200.6(D), 210.5(C), 215.12(C)	