The provisions of the IBC apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure. In moving from the 2006 IBC to the 2009 IBC there are a number of changes. Below is a list of some of the new requirements and more pertinent changes:

**Chapter 2 Definitions**: Ambulatory Health Care facilities are now defined as buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24 hour basis to individual who are rendered incapable of self-preservation. This use is classified as Group B. An automatic sprinkler system is required for the fire area. There are exceptions concerning the location of the ambulatory health care facility and the number of care recipients that are incapable of self-preservation. See Section 422.

Clinic-outpatient is now defined as buildings or portions thereof used to provide medical care on less than a 24 hour basis to individuals who are not rendered incapable of self-preservation by the services provided. This use remains classified as group B.

**Section 308.5.1 Adult Care Facility** A new exception states that if all of the occupants are capable of responding to an emergency without the assistance of staff then the facility can be classified as R-3. Previously, this type of use was classified as an I-4.

**Section 402 Covered and Open Mall Buildings** The definition of a covered mall now includes an open mall. This allows a collection of buildings to be considered as a single open mall building.

**Section 403 High Rise Buildings** There are a lot of changes to this section. Many of the changes are for buildings taller than 120 ft and taller than 420 feet. Changes that affect all high rise buildings are as follows:
- Fire pumps to be supplied by two different mains.
- Smoke removal system required.
- Exit enclosures to be separated at least 30 ft or one quarter of the diagonal.
- Luminous egress path marking required.
- Bond strength for spray-applied fireproofing increased.
- Emergency responder radio coverage required.
- Occupant self-evacuation elevators can be installed.
*Fire Service access elevators are required for buildings taller than 120 ft.*

**Section 419 Live Work Units** This new section addresses this type of mixed use. Key component is that separation of unlike uses is not required.
Table 503  Allowable Height and Area  Reduced the allowable number of stories in for Type IIB and IIIB buildings by one story for Group B and S occupancies and by two stories for Group M occupancies.

Section 703.6 Marking and Identification  A new requirement that specifies that fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions must be identified with markings indicating that openings need to be protected.

Section 903.2.3 Group E  The fire area threshold limit for the installation of an automatic sprinkler system was reduced from 20,000 sq ft to 12,000 sq ft.

Section 903.2.7 Group M  A new trigger specifies that Group M occupancies which display and/or sale upholstered furniture would be required to have automatic sprinklers.

Section 903.2.10 Group S-2 Enclosed Parking Garages  A new sprinkler threshold for enclosed parking garages has been established. The threshold for requiring sprinklers is now 12,000 sq ft previously the base requirement was that all enclosed parking garages required sprinkler protection.

Section 907  Fire Alarm and Detection Systems  This section has been completely reformatted in an effort to clarify certain provisions and get rid of inconsistencies. One major improvement is that the code now clearly states when occupant notification is required.

Section 913.2.1 Protection of Fire Pump Rooms  There is a new requirement that fire pumps be located in fire-resistive rooms. There is an exception for fire pumps located external to the building.

Section 1005.1 Minimum Required Egress Width  In the 2006 IBC, Table 1005.1 set forth allowances for reduction in egress width if the building was fully sprinkled. That table along with the sprinkler reduction factor has been eliminated.

Section 1007.8 Two-way Communication  A two-way communication system is required at each accessible elevator landing that is one or more stories above the level of exit discharge. There is an exception if an area of refuge is provided.

Section 1007.9-11 Signage and Instructions  Visual and tactile signage must be provided at every area of refuge which defines its purpose. Signage indicating the location of all accessible means of egress must be provided at all non-accessible means of egress, at all elevators and within areas of refuge. Instructions must be posted in all areas of refuge and exterior areas of rescue assistance regarding use of the area and how to use two-way communication systems.

Section 1008.1.9.6 Special locking Arrangements  In Group I-2  Delayed egress locks are permitted in limited areas in Group I-2 where the needs of the patients dictate additional security.
Section 1009.14  Stairway to Elevator Equipment  Roofs and penthouses containing elevator equipment are required to be served by a stairway.

Section 1013 Guards  Several changes have been made to this section. The permitted maximum size of openings in the upper portion of guards has been reduced from 8 inches to 4 3/8 inches. When determining where a guard is required, the vertical distance from the walking surface to the grade or floor below is now based on the lowest point within a 36-inch radius measured horizontally from the edge of the open sided walking surface.

Section 1021 Number of Exits and Continuity  The allowance for single exit buildings (formally Section 1019 - 2006 IBC) has been changed to address egress from individual stories within buildings. See Table 1021.2 Stories with One Exit.

Section 1024 Luminous Egress Path Markings  A new section has been added that addresses photo luminescent and self-luminous exit path markings.

Chapter 17 Special Inspection  There are a total of 48 changes to this chapter. Many of the changes simply clarify the codes intent. A number of changes, however, offer directions or methods on how certain tests or inspections are to be performed.

Chapter 18 Soils and Foundations  The chapter was entirely revised. There are a total of 67 changes. The scope of the general requirements related to the design of all foundations and the specific requirements related to the design of shallow foundations have been clarified. Technical changes have been made to resolve conflicting provisions.

Section 3007 Fire Service Access Elevators  Provides for new requirements addressing construction, lobbies, lighting and power for high rise buildings over 120 ft.

Section 3109.9 Suction Entrapment Avoidance  The requirements for suction entrapment avoidance found in the 2006 IBC have been deleted. The user is now sent to Standard APSP-7.

Chapter 34 Existing Buildings  The International Building Codes has been deemed to be equivalent to the requirements of this chapter.
2009 International Energy Conservation Code (IECC)

Overview of Changes

The IECC is recognized as the national model energy code of choice for U.S. cities, counties and states that adopt codes. To a large extent the layout of the 2009 edition remains unchanged, despite the fact that it brings with it more energy efficiency improvements than ever before in the history of the IECC. Below is a list of some of the new requirements and the more pertinent changes:

Section 102.1.1 Above Code Programs  This section permits the code official to recognize other national, state or local energy efficiency programs. However, they must meet or exceed the mandatory requirements found in Chapters 4 and 5.

Section 103.2 Information on Construction Documents  Considering that 75% of compliance with the energy code is achieved through plan review, the information required on construction documents has been expanded. Required information now includes, area weighted U-factor and SHGC calculations; mechanical and service water heating systems and equipment types; sizes and efficiencies; economizer description; equipment and systems controls; fan motor hp and controls; duct sealing; duct and pipe insulation and location; lighting fixture schedules with wattage and control narratives; and air sealing details.

Section 202 General Definitions  New definitions have been added for air barrier, C-factor, daylight zone, demand control ventilation, entrance door, fan systems, F-factor, high-efficacy lamps and nameplate horsepower.

Section 4 contains requirements for residential buildings

Table 402.1 Insulation and Fenestration Requirements by Component  & Table 402.1.3 Equivalent U-Factors
Several changes were made to this table. Overland Park is in Climate Zone 4. Only two changes were made in this climate zone. The fenestration U-factor was lowered from .40 to .35 (U-factors are maximums). Also the R-value for a mass wall was increased from 5 to 10 when more than half of the insulation is on the interior of the mass walls.

Section 402.4.1 Building Thermal Envelope  Attic access openings and rim joist have been added to the list of items that need to be caulked, gasketed, weather stripped or otherwise sealed with an air barrier material, suitable film or solid material.

Section 402.4.2 Air sealing and Insulation  The air tightness of the building envelope shall be tested or inspected. Testing for air leakage shall be tested with a blower door at a pressure of 33.5 psf. In lieu of testing a rigorous inspection is required of various components (see Table 402.4.2). The code official has the power to accept third party certification.
Section 402.4.3 Fireplaces  Wood burning fire places are required to have gasketed doors and be supplied with outdoor combustion air.

Section 403.1.1 Programmable Thermostat  Requires at least on programmable thermostat per dwelling unit where the primary heating system is a forced-air furnace.

Section 403.3.2 Sealing (ducts)  Ducts are required to be tested for air tightness. Testing is not required where the air handler and all ducts are located within the thermal envelope.
*This may force the elimination of stud joist return air vents.

Section 403.9 Pools  Time switches to turn pumps and heaters off are now required. Heated pools are required to have vapor-retardant pool covers on or at the water surface.

Section 404.1 Lighting equipment  A minimum of 50% of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.

Section 5 contains requirements for Commercial buildings

Section 501.2 Application  Commercial designer must now comply with either the IECC or ASHRA/IESNA 90.1. No longer is it permitted to co-mingle compliance within major energy-using sub-system categories among the code and the standard.

Section 502.1.2 U-factor Alternatives and Table 502.1.2  U-factor and R-value alternatives are offered for commercial building insulation and fenestration requirements.

Table 502.2(1) Building Envelope Requirements  Provisions specific to R occupancies greater than 3 stories, and all other commercial Group R occupancies have been added.

Section 503.2.5.1 Demand Controlled Ventilation (dcv)  DCV is required for spaces larger than 500 sq ft and with an average occupant load of 40 people per 1000 sq ft. 
DCV is a ventilation system capability that provides for the automatic reduction of outdoor air intake below design rates when the actual occupancy of spaces served by the system is less than design occupancy.

Section 503.2.10 Air system design and control  New requirements have been added for the design of HVAC systems, fan motor energy use limitations and fan power pressure adjustments.

Section 503.2.11 Heating outside of a building  Systems installed outside of a building are now required to be radian systems.

Section 505.2.2.3 Daylight controlled  Daylight zones shall be provided with individual controls that control the lights independent of general are lighting. Daylight control zone see definitions.
2009 International Fire Code (IFC)
Overview of Changes

The IFC establishes regulations affecting or relating to structures, processes, premises and safeguards regarding:

- The hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices;
- Conditions hazardous to life, property or public welfare in the occupancy of structures or premises;
- Fire hazards in the structure or on the premises from occupancy or operation;
- Matters related to the construction, extension, repair, alteration or removal of fire suppression or alarm systems.

In moving from the 2006 IFC to the 2009 IFC there are a number of changes. Below is a list of some of the new requirements and the more pertinent changes:

**Section 403.3 Crowd Manager (new)**  Trained crowd managers shall be provided where more than 1,000 persons congregate. Crowd managers shall be established by the ratio of 1 manager per 250 persons.

**Section 510 Emergency Responder Radio Coverage (new)**  There are new provisions that require in-building coverage of emergency responder radios. These provisions apply to all new buildings and existing buildings. Provisions for minimum signal strength are given. The time frame for existing buildings is to be set by the Fire Chief.

**Section 603.4.2 Portable Gas-Fired heating appliances (new)**  There are now specific requirements governing the use of portable gas-fired heating appliances. These type units are often used to provide heat on outdoor patios. The use of these heating appliances is prohibited inside tents, canopies and membrane structures.

**Section 701.2 Unsafe Conditions (new)**  This section addresses the maintenance of fire resistive construction. Failure to maintain the fire resistive construction of fire walls, fire barriers, fire partitions, smoke barriers etc., will mean that the building could be deemed unsafe. Reference is also made to Chapter 46 as it pertains to shaft enclosures.

**Section 903.6.2 Group I-2 (new)**  This section directs the user to Chapter 46 which will require fire sprinkler protection of existing Group I-2 occupancies. Group I-2 occupancies include hospitals, nursing homes (immediate care and skilled nursing facilities), mental hospitals and detoxification facilities.

**Section 2206.8 Alcohol Blended Fuel-dispensing Operations (new)**  This section sets for some specific regulations and gives a means for approving alcohol blended fuel dispensing facilities. E85 falls under alcohol blended fuel by definition.
Chapter 46 Construction Requirements for Existing Buildings (new)  This is a new chapter which is primarily an accumulation of existing requirements from Chapters 7, 9 & 10.

Section 4604.23 Egress Path markings (new)  Existing high rise buildings with occupancy groups A, B, E, I, M and R-1 shall have luminous egress path markings per Section 1024.
2009 International Fuel Gas Code (IFGC)
Overview of Changes

The provisions of the IFGC apply to the installation of fuel gas piping systems, fuel gas utilization equipment, gaseous hydrogen systems and related accessories. In moving from the 2006 IFGC to the 2009 IFGC there are a few changes. Some of the more notable changes are listed below:

**Section 404.1 Prohibited Locations**  The code has been modified to clearly state that fuel gas piping shall not be run through any supply, return, or exhaust duct or shaft.

**Section 404.4 Underground Penetration Prohibited**  The code has been modified to clearly state that gas piping shall not penetrate building foundation walls at any point below grade.

**Section 614.6.6 Length Identification**  Where exhaust ducts for dryers have been concealed within the building construction, the code will now require that the equivalent length of the exhaust duct be identified by a permanent label or tag.
2009 International Mechanical Code (IMC)
Overview of Changes

The IMC regulates and controls the design, construction, and installation, quality of materials, location, operation and maintenance or use of mechanical systems. In moving from the 2006 IMC to the 2009 IMC there are a number of changes. Below is a list of some of the new requirements and the more pertinent changes.

**Section 202 Definitions** One of the new definitions is for a “breathing zone”. This definition will be used when calculating ventilation rates. See Table 403.3 Minimum Ventilation Rates.

**Section 303.5 Indoor locations** Water heaters installed in closets or alcoves are now required to be listed for that application.

**Section 304.6 Public Garages** Appliances such as suspended unit heaters are now required to be located 1 ft above the tallest garage door opening.

**Section 306.1 Access for Maintenance and Replacement** A requirement for a working space of 30 inches by 30 inches in front of the controls side of the appliance has been added.

**Section 307.2.3.2 Appliance, Equipment and Insulation in Pans** This section requires that any equipment, appliance or insulation that could be damaged by water when the auxiliary drain pan fills to be located above the flood level rim of the pan. [NEW]

**Section 403 Mechanical Ventilation** Existing sections were replaced with new sections that more closely reflect the outdoor air ventilation requirements of ASHRAE 62-2004. The changes are intended to improve air quality, and in many cases they reduce the quantity of outdoor air required. [NEW]

**Table 403 Minimum Ventilation Rates** This table was totally revised to reflect the ventilation rates in ASHRAE 62-2004. [NEW]

**Section 505.2 Make Up-Air Required** For domestic kitchen exhaust hoods, capable of exhausting more than 400 cfm make-up air shall be provided. No provisions for tempered air were mandated. [NEW]

**Section 506.4.2 Type II Terminations** Adds requirements for the termination of Type II hoods. Previously the code was silent on this matter. [NEW]

**Section 607.5.6 Exterior Walls** This section requires fire dampers in ducts and air transfer openings that penetrate fire-resistance-rated exterior walls. [NEW]
Section 1101.10 Locking Access Port Caps  A new section was added to require outdoor HVAC refrigerant circuits to be fitted with locking-type caps to prevent unauthorized access to the refrigerant. **This was added to protect the safety and well-being of children and young adults who may attempt to inhale the refrigerant vapors in order to become intoxicated.** [NEW]

Section 1209 Embedded Piping  New sections were added which require thermal barriers for radiant floor heating systems. [NEW]
2009 International Plumbing Code (IPC)
Overview of Changes

The IPC regulates and controls the design, construction, and installation, quality of materials, location, operation and maintenance or use of plumbing systems. In moving from the 2006 IPC to the 2009 IPC there are approximately 101 changes. Below is a list of some of the new requirements and the more pertinent changes:

**Section 312.9  Shower liner test**  Shower floor liners that are field installed must be leak tested to assure that the installation is water tight.  [NEW]

**Section 403.1 Fixture Calculations**  There is now a new requirement which specifically states that one must split the occupant load equally into male and female prior to applying the fixture ratios.  [NEW]

**Section 403.1.1 Family or Assisted-use Toilets and Bath Fixtures**  The term unisex toilet has been deleted. Now we have family or assisted-use fixtures. [NEW]

**Section 403.3.1 Access**  Access to toilet facilities can be from within the building or from the exterior of the building. [NEW]

**Section 403.4.1 Directional Signage**  Directional signage indicating the route to public toilet facilities is now required. [NEW]

**Section 412.2 Floor Drains**  Floor drains must have ready access for cleaning and rodding purposes. There is an exception for drains serving refrigerated display cases.

**Section 502.5 Clearance for Maintenance and Replacement**  A working space of 30 inches wide by 30 inches deep is required in from of the control side of the appliance. Equipment, piping and/or duct work shall not prevent the removal of the appliance.  [NEW]

**Table 604.3 Required Capacity at Fixture Supply Pipe Outlets**  Flow pressures for several fixtures were increased to be in alignment with the standards for those fixture water controls.

**Section 802.1.8 Food Utensils, Dishes, Pots and Pans Sinks**  Sinks used for cleaning utensils, pots and pans and/or dishes are now allowed to connect directly or have an indirect connection to the building drain.

**Section 917.8 Prohibited Installations**  An air admittances valve for a sump or tank vent can not be utilized unless the system is of an engineered design.

**Table 1102.4 and 1102.7**  ASTM F2306 polyethylene plastic pipe material has been added to the tables.
2009 International Residential Code (IRC)
Overview of Changes

The provisions of the IRC apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses. In moving from the 2006 IRC to the 2009 IRC there are a number of changes. Below is a list of some of the new requirements and more pertinent changes:

R302.2 Townhouses  The exception for allowing separation of units with a common 2-hour wall has been changed to allow for a 1-hour common wall. This change was made as a companion change to the introduction of automatic fire sprinkler systems as a requirement.

Section R313 Automatic Fire Sprinkler Systems

Section R313.1 Townhouses Automatic Fire Sprinkler Systems  Requires that all newly constructed townhouses to be equipped with an automatic fire sprinkler system designed in accordance with P2904. There are no trade-offs.

Section R313.2 One- and Two-Family Fire Sprinkler Systems  Requires that all newly-constructed single family residences be equipped with an automatic fire sprinkler system designed in accordance with P2904 or NFPA13D. Effective date is January 1, 2011.

Section R315 Carbon Monoxide Alarms  Requires that a carbon monoxide alarm be installed in the immediate vicinity of the bedrooms. It does not require a detector within the bedroom. Work requiring a permit on existing dwellings will require the installation of a carbon monoxide detector.

Section R317 Protection of Wood and Wood Products Against Decay  Wood siding, wood sheathing and wood framing having a clearance of less than 2 inches from concrete steps, driveways, porch slabs, patios and similar surfaces that are exposed to the weather will be required to be protected from decay.

Tables R404.1(1) through R404.1(3)  The prescriptive lateral restraint provisions for the top of concrete and masonry wall have been deleted from the code.

Section 502.2.1 Deck Ledger Connection to Band Joist  A new section gives prescriptive requirements for attaching decks to the main building.

Section 602.10 Wall Bracing  The section has been completely revised. More figures have been added for clarification.
Tables R602.10.1.2(1) and R602.10.1.2(2) The lateral loading based wind and seismic loads have been separated. The end result of this change is a requirement for more linear feet of braced wall panels per braced wall line.

Section 602.10.1.4 Braced Wall Panel Location The distance from the end of the braced wall line to the first braced wall panel at each is now limited to 12.5 ft. Previous code additions allowed 12.5 ft from each end.

Section 602.10.8 Braced Wall Panel Joints All vertical and common joints have to occur over and be fastened to blocking having a minimum thickness of 1.5 inches.

Section R612 Exterior Windows and Doors With regard to 24-inch sill heights, some exceptions as well as some new sections dealing with fall prevention devices and opening limiting devices have been added.

Section R703.9 Exterior Insulation and finish system (EIFS) A new standard, ASTM E 2578, has been added to address EIFS systems with drainage.

Table N1102.1 Insulation and Fenestration requirements by component & Table N1102.1.2 Equivalent U-Factors Several changes were made to this table. Overland Park is in Climate Zone 4. Only two changes were made in this climate zone. The fenestration U-factor was lowered from .40 to .35 (U-factors are maximums). The R-value for a mass wall was increased from 5 to 10 when more than half of the insulation is on the interior of the mass walls.

Section N1102.4.1 Building Thermal Envelope Attic access openings and rim joist have been added to the list of items that need to be caulked, gasketed, weather stripped or otherwise sealed with an air barrier material, suitable film or solid material.

Section N1102.4.2 Air sealing and insulation The air tightness of the building envelope shall be tested or inspected. Testing for air leakage shall be tested with a blower door at a pressure of 33.5 psf. In lieu of testing a rigorous inspection is required of various components (see Table 1102.4.2). The code official has the power to accept third party certification.

Section 1102.4.3 Fireplaces Wood burning fireplaces are required to have gasketed doors and be supplied with outdoor combustion air.

Section 1102.4.5 Recessed lighting Recessed luminaries installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned space. Luminaries are to be IC-rated and labeled as meeting ASTM E 283.

Section 1103.1.1 Programmable thermostat Requires at least one programmable thermostat per dwelling unit where the primary heating system is a forced-air furnace.
Section 1103.2.2 Sealing (ducts) Ducts are required to be tested for air tightness. Testing is not required where the air handler and all ducts are located within the thermal envelop. *This may force the elimination of stud joist return air vents.

Section 1103.8 Pools Time switches to turn pumps and heaters off are now required. Heated pools are required to have vapor-retardant pool covers on or at the water surface.

Section 1104.1 Lighting equipment A minimum of 50% of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.

Mechanical Provisions

Section M1401.3 Sizing ACCA manual S has been referenced as the method of sizing heating and cooling equipment.

Section M1503.4 Make up Air Required (new) Exhaust hoods exceeding 400 CFM will necessitate the need for make up air. Make-up air systems will need to be interconnected with the exhaust hood so operations are simultaneous.

Section M1502.4.5 Length Identification (NEW) If the exhaust duct of a dryer is concealed then this section requires a label or tag which states the equivalent length of the exhaust duct.

Section M1601.6 Independent Garage HVAC Systems HVAC systems supplying air to living spaces shall not supply air to or return air from a garage.

Plumbing Provisions

Section P2503.6 Shower liner test This section mandates that shower floor liners which are field installed be tested for water tightness.

Section P2719.1 Floor Drains This new section specifies that floor drains cannot be located under appliances nor have access blocked by permanently installed appliances.

Section P2801.3 Location This new section clarifies that water heaters and storage tanks to be located in accordance with M1305 which addresses the need to provide a space where access, observation, maintenance, servicing and replacement can be accomplished without moving other pieces of equipment.

Section P2903.7 Water Hammer Water hammer arrestors are no longer required on quick closing valves.

Section P2904 Dwelling Unit Fire Sprinkler Systems This section is an alternative to the fire sprinkler design requirements specified in NFPA13D. It addresses multipurpose fire sprinkler systems and stand alone sprinkler systems.
Section P3005.2.6 Base of Stacks This section has been revised to explicitly state that a cleanout is required at the base of each waste or soil stack.

**Fuel Gas Provisions**

Section G2447.5 Vertical Clearance above Cooking Top (new) The minimum distance between a range hood or microwave (listed appliance) and a gas cook top is 24 inches.

Section G2439.5.6 Length Identification (new) Where exhaust ducts for dryers have been concealed within the building construction, the code will now require that the equivalent length of the exhaust duct be identified by a permanent label or tag.

**Electrical Provisions**

Section E3901 General Receptacles that are switched are not allowed to be counted as part of the required receptacle distribution.

Section E3902.2 Garage and Accessory Building Receptacles located in garages and unfinished basements are now required to have ground fault circuit interrupter protection.

Section E3902.11 Arc-fault circuit-Interrupter Protection In addition to bedrooms, arc-fault protection is now required on all branch circuits feeding family rooms, dining rooms, living rooms, parlors, libraries, dens, sunrooms, recreation rooms, closets, hallways, and similar rooms.

Section E4002.14 Tamper-Resistant Receptacles Listed tamper-resistant receptacles are now required throughout the dwelling unit, outside the dwelling unit and in the attached or detached garage.

Section E4209.1 Ground-Fault Circuit Interrupters The ground fault circuit interrupter protecting the hydro-massage bathtub, are now required to be readily accessible. Readily accessible means that access is available without removing a panel or obstruction.

**Appendix**

Appendix G Swimming Pools, Spas and Hot Tubs Suction outlets are now required to be designed and installed in accordance with ANSI/APSP-7. The provisions governing suction entrapment previously found in the code have been deleted.
The provisions of the NEC cover the installation of electrical conductors, equipment, and raceways; signaling and communications conductors, equipment, and raceways; and optical fiber cables on public and private premises. In moving from the 2005 NEC to the 2008 NEC there are hundreds of changes, although most of the changes and/or revisions are an attempt to clarify the meaning of the code or address new products; however, there are some new requirements. Below is a list of some of the new requirements and the more pertinent changes:

Section 220.2 General The continuity of a grounded conductor shall not depend on a connection to a metallic enclosure, raceway, or cable armor.

Section 210.4 (A) & (B) Simultaneously disconnecting all conductors of multi-wire branch circuits is now expanded to all multi-wire branch circuits.

Section 210.4 (D) Ungrounded and grounded conductors of multi-wire branch circuits must be grouped together in at least one location within a panel board or other enclosure.

Section 210.8 (A) All 125-volt single-phase, 15- and 20-ampere receptacles in dwelling unit garages, accessory buildings, and basements are required to have ground-fault circuit-interrupter protection. All of the exceptions have been removed except for fire alarm or burglar alarm systems located in basements.

Section 210.8(B) Other Than Dwelling Units - Outdoors Generally, all receptacles located outdoors are required to have ground-fault circuit-interrupter protection unless they are inaccessible or serviced by qualified personnel.

Section 210.12 (B) Arch-fault Circuit-interrupter Protection Combination-type AFCI protective devices are now essentially required throughout the dwelling unit. Kitchens, bathrooms, garages, basements appear to be exempt.

Section 210.52 Dwelling Unit Receptacle Outlets It has been made clear that switched receptacles do not count as outlets required by 210.52.

Section 210.52(E) Outdoor Outlets Balconies, decks and porches that are accessible from the inside of the dwelling unit shall have at least one receptacle outlet installed within the perimeter of the balcony, deck or porch. There is an exception for areas less than 20 sq ft.

Section 230.82 (3) Meter Disconnect Switches Meter disconnect switches shall be capable of interrupting the load served. They shall be grounded in accordance with Part V and bonded in accordance with Part VII of Article 250.
Section 250.94 Bonding for Other Systems  An intersystem bonding termination means that includes provisions for connecting at least three grounding or bonding conductors required for communications systems by Chapter 8 is required to be installed at one of three specific external locations.

Section 300.5 (B) Wet Locations  The interior of enclosures or raceways installed underground shall be considered to be a wet location.

Section 300.5 (C) Underground Cable Under Buildings  Underground cables installed under buildings shall be in a raceway. (Clarification only)

Section 300.9 Raceways in Wet Locations Above-Grade  The conductors and cables installed in above-grade raceways located in wet locations are required to be suitable for use in wet locations in accordance 310.8 (C). [New requirement]

Section 310.15(B)(2)(C)  Conduits Exposed to Sunlight on Rooftops  Raceways and cables installed on rooftops are subject to correction factors based on distance above the roof surface. [New requirement]

Section 314.27 Boxes at Luminaire Outlets  Ceiling boxes shall be designed to support a luminaire weighing a minimum of 50 lbs. Boxes for luminaires are required to be listed for luminaire support and indentified for the weight that must be supported.

Section 334.12(A)(1) Nonmetallic-Sheathed Cable (Exception)  Type NM cable is permitted for wiring in fire-rated construction Types I and II, provided it is installed in a raceway that it suitable for use in this type of building construction. [New]

Section 334.12(B)(4)  Nonmetallic-Sheathed Cable  Nonmetallic sheathed cable is not permitted in damp or wet locations.

Section 334.80 Ampacity  Where cables containing two or more current-carrying conductors are installed in contact with thermal insulation without maintaining proper spacing they are subject to ampacity adjustment factors.

Section 348.12(1)  Flexible Metal Conduit  Flexible metal conduit is no longer permitted in any wet locations.

Section 406.11 Tamper-Resistant Receptacles in Dwelling Units  Listed tamper-resistant receptacles are required for 125-volt, 15- and 20-ampere receptacles in dwelling units specified in 210.52.

Section 422.52 Electric Drinking Fountains  Electric drinking fountains shall be protected with ground-fault circuit-interrupter protection.
**Section 680.22 (B) GFCI Protection**  All 15- and 20-ampere, 125- or 240-volt, single-phase outlets supplying pool pump motors require GFCI protection whether supplied by a receptacle and cord connection or hard-wired to the branch-circuit.

**Section 680.26(C) Bonding of Pool Water**  An intentional bond of a minimum conductive surface area of 9 square inches shall be installed in contact with the pool water. The pool water is bonded to the equipotential bonding grid.

**Section 700.9(D)(3) Generator Control Wiring**  Emergency generator control circuit wiring (including the start circuit) between the transfer equipment and the generator must be kept independent of other wiring and meet the minimum 1-hour fire rating protection requirements. [New]

**Section 760.3(G) Installation of Conductors with Other Systems**  Fire alarm conductors are not permitted to be installed in the same raceway or cable tray that contains piping, tubing, or the equivalent for systems foreign to electrical wiring systems, such as steam, air gas, and so forth.