



Oregon

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Building Codes Division Statewide Interpretation

PROGRAM: Electrical Program
SUBJECT: Arc-Fault Circuit Interrupters
SOURCE: NEC 2005 Section 210.12
REFERENCE: Oregon Residential Specialty Code and Oregon Electrical Specialty Code
DATE OF ISSUE: April 1, 2005
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QUESTION: How are Arc-Fault Circuit Interrupters to be used in a remodel situation or with dedicated receptacles, smoke detectors? Also, new construction?

ANALYSIS:

210.12 of the 2005 National Electrical Code clearly requires that all branch circuits supplying 125 volt 15 and 20 ampere outlets installed in a dwelling unit bedroom shall be protected by an AFCI. Generally, this would be accomplished through the use of an AFCI circuit breaker installed in the panelboard or adding an AFCI device within 6 feet of the panelboard as allowed by 210.12 exceptions.

Smoke detectors being installed on circuits protected by AFCI devices raises the concern that a nuisance trip or an actual fault may result in a smoke detector not functioning due to a discharged or removed battery. The requirement for the smoke detector to have a 10-year battery has been clarified by the State Fire Marshal's office and requires the smoke detector to have a 10-year battery only if the smoke detector is solely battery powered. Additionally, concerns have been raised about dedicated medical equipment and other life safety devices being on an AFCI protected circuit.

Additional questions have arisen concerning branch-circuit protection requirements when adding new outlets in an existing dwelling units or performing service upgrades.

DETERMINATION:

In a situation where an existing dwelling unit bedroom circuit is being extended or a remodel is taking place that does not result in the exposure of electrical wiring by the removal of interior wall and ceiling finishes , the use of AFCI circuit breakers shall not be required, however, AFCI receptacles, when available, shall be used. In the event that interior walls and ceiling finishes of bedrooms are removed then AFCI devices shall be required for all bedroom outlets other than those dedicated to the use of smoke detectors, nurse call, fire alarm and medical equipment.

Replacement or upgrading of the service or panelboard shall not require that existing circuit breakers for dwelling unit bedroom circuits be replaced with AFCI devices.

New construction shall meet the requirements of the prevailing Oregon Electrical Specialty Code and Oregon Residential Specialty Code, however, smoke detectors, nurse call, fire alarm or dedicated medical equipment shall not be required to be installed on AFCI protected circuits.

Switches that are independent of the bedroom circuit, such as a switch that controls outside lighting, shall not be required to be protected by an AFCI device.