I apologize I should have had slides to explain this.

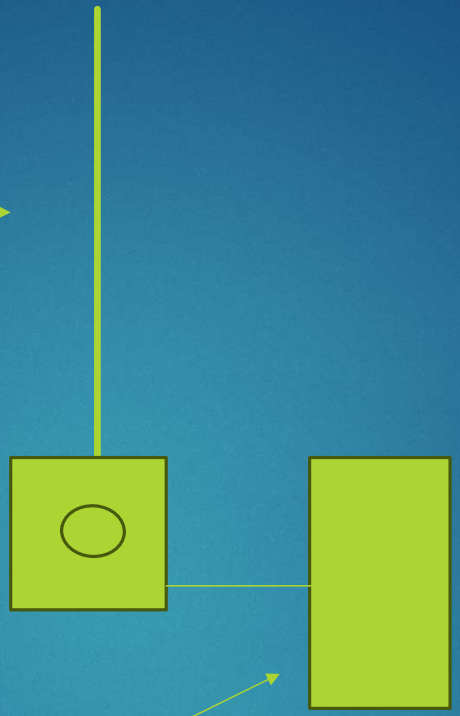
230.85 Emergency Disconnect on One- and- Two Family Dwellings

All Service conductors shall terminate in disconnecting means having a short-circuit current rating equal to or greater than the available fault current, installed in a readily accessible outdoor location. If more than one disconnect is provided, they shall be grouped. Each disconnect shall be one of the following:

(1) Service disconnects marked as follows:
EMERGENCY DISCONNECT, SERVICE DISCONNECT

I've illustrated this on the next slide

Service Conductors from utility. Generally, they will not allow a disconnect before the meter. Therefore 230.85(2) generally will not be used for residential.



Meter

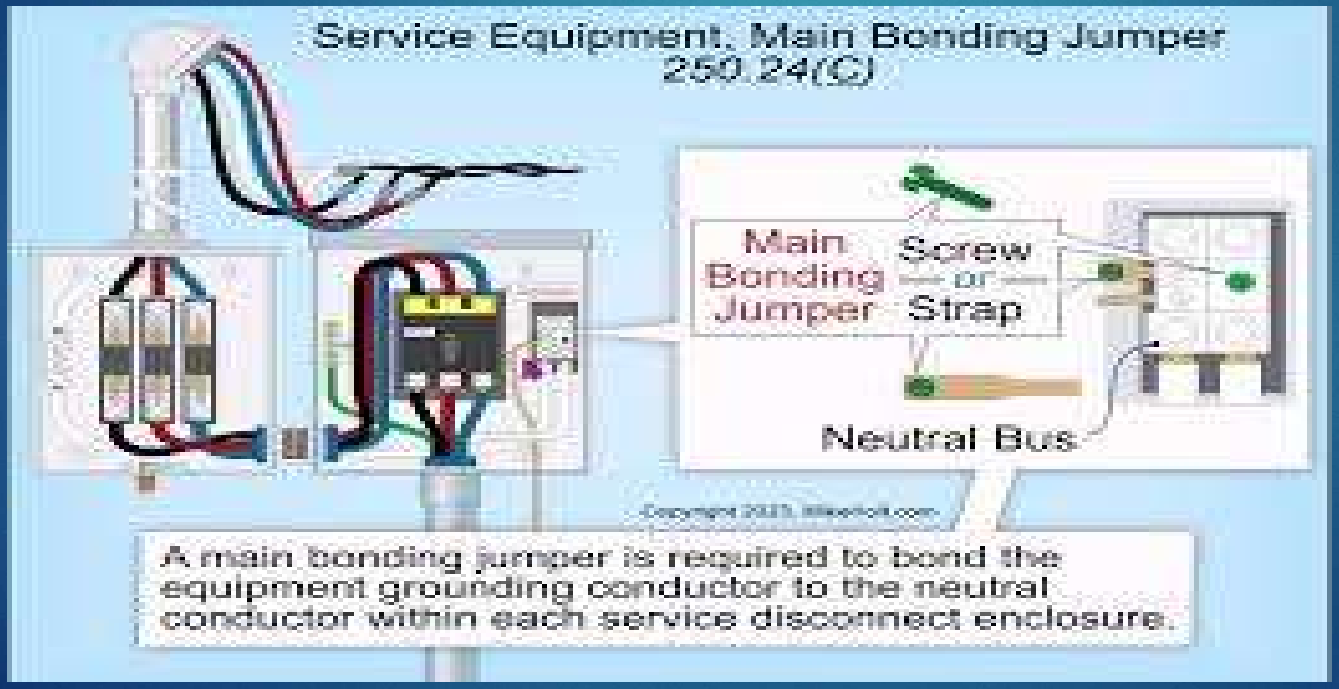
Emergency Service disconnect. Must have a short-circuit current rating equal to or greater than the available fault current, the utility will provide that information, installed in a readily accessible outdoor location

This can be labeled as either 230.85 (1) or (3) depending on how grounding is done. If the main panel is used as the Service Disconnect this would be labeled as EMERGENCY DISCONNECT, NOT SERVICE EQUIPMENT and MARKING SHALL COMPLY TO 110.21(B). It would still need a main bonding jumper (250.24(C) and no continuous metal conduit between the disconnect and the panel.

If newly installed panel is installed as a subpanel, this will be marked as 230.85(1), EMERGENCY DISCONNECT, SERVICE DISCONNECT, and all grounding done here.

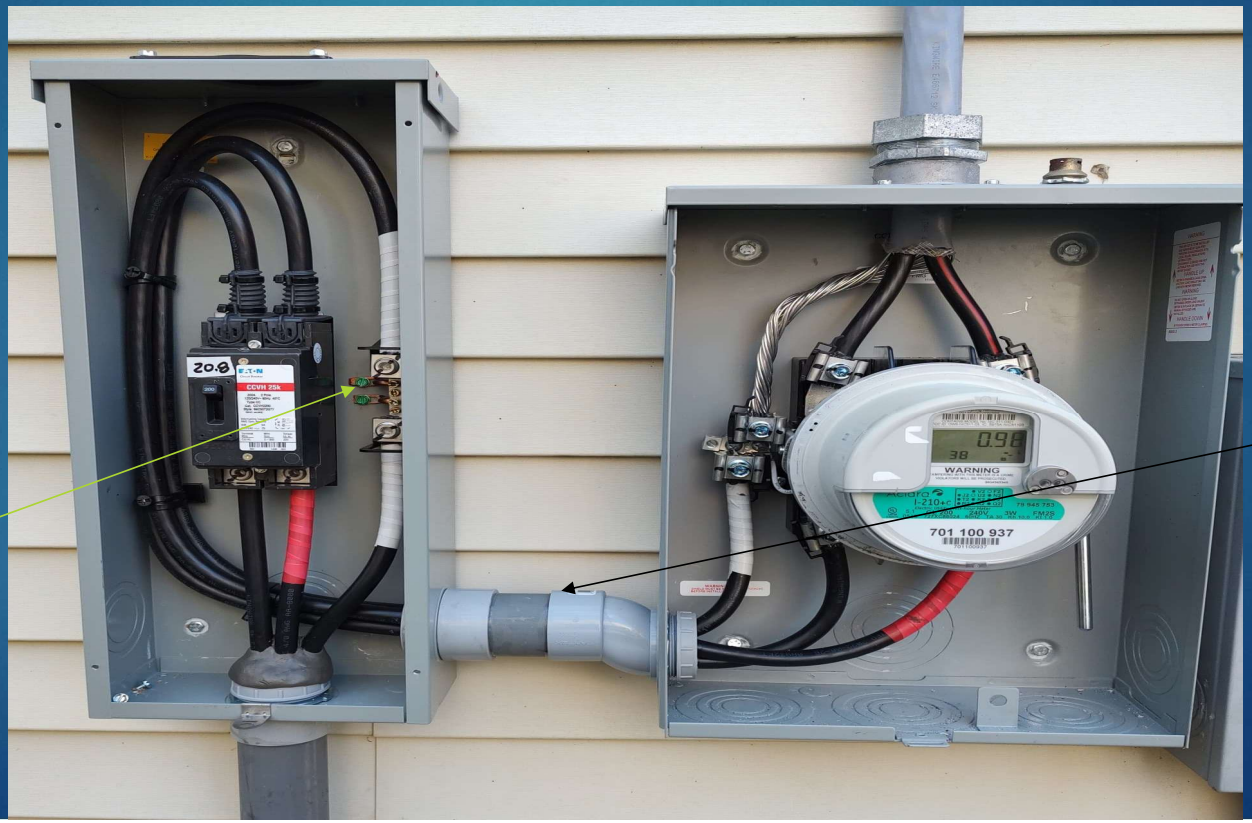
230.85 GROUNDING REQUIREMENTS:

Under the condition 230.85(1) a main bonding jumper shall be installed and the service wires on the load side of the disconnect will have to be 4-wire going to the panel, two ungrounded conductors, one grounded (neutral) conductor and one supply side bonding jumper. Now grounding this disconnect will comply with 250.24(C) GROUNDED CONDUCTOR BROUGHT to SERVICE EQUIPMENT. The panel will now be treated as a subpanel and the Grounded Conductor and the Equipment Grounding conductor will be separated.



230.85(3)
Under this scenario, Other listed disconnect switches or circuit breakers on the supply side of each service disconnect that are suitable for use as service equipment and marked as follows: Emergency Disconnect, Not Service Equipment and Markings shall comply with 110.21(B) grounding of this disconnect still has to be in accordance with 250.24(C) and would look like this. Now, if this is just a knife switch, it would not need AIC protection if no circuit breaker or fuses but still rated as suitable for use as service equipment.

The Grounded Conductor still needs to be bonded to the enclosure (250.24(C) but the wiring going to the residence will still be 3-wire and the panel inside the house will need a main bonding jumper also.



If this conduit is metal, it will need bonding bushings (250.92(A) on each side of fittings and connected to enclosure

The utility will provide the AIC rating for the disconnect.

Make sure if used as 230.85(3) there are no metal parts connecting the disconnect directly to the panel, metal conduit would have to be interrupted inside the house, and the conductors would still be considered Service Conductors until they terminate in a circuit breaker or fuse box.

Under option (3) if a listed knife switch is installed without a circuit breaker or fuse, no AIC requirement would be required but it would still of course need to meet the ampacity of the service. This would not be considered service equipment but 250.24(C) would still need to be met so it would require a main bonding jumper.

Also, if a generator is at the residence a label informing the first responders would need to be placed on the disconnect saying that a secondary power source is still present.

Again, I apologize. I was having a medical issue (I forgot my blood pressure medicine and couldn't focus or think and the technical issues just added to it) Again, I am so sorry

Sincerely
Anthony J Bubrowski