Basic Strategy

The basic strategy for the CCU supplying 240 VAC to the camera through the triax is as summarized in section 1-2 of the supplied handouts. The CCU first supplies 30 VDC to the camera through the triax. If the CCU determines that the camera responds in such a way that indicates the camera is connected and is functioning properly, the CCU then supplies 240 VAC to the camera through the triax. The 30 VDC is sort of a sentinel voltage that gives the camera enough power to let it respond appropriately to the CCU.

There is also short circuit detection and protection.

More Details

Section 5-2 on page 5-6 states that the camera power switch is turned on, a +30 VDC voltage is switched on and sent to the camera through the triax. If the AT-55A/55B board determines that the camera is accepting the +30 VDC, it closes a relay, which then switches on 240 VAC. Next, open and short checking is performed (by the same board), and if OK, the 240 VAC is supplied to the camera through the triax.

If the CCU doesn't detect an appropriate response from the camera to the +30 VDC, it will not supply 240 VAC through the triax. This response detection is always operating and responds quickly, so that if an operator detaches the triax from the camera, the CCU recognizes the lack of response from the camera and stops supplying 240 VAC through the triax. There's probably a little bit of slack time built into the triax connector, maybe due to the protective housing within which the conductors are recessed, such that the disconnection and subsequent detection occurs by the time the triax is removed far enough away from the connector to make it possible for a person or conductive material (like water or metal) to contact the current-carrying conductors in the triax.