



AIRCRAFT MAINTENANCE MANUAL

AC TIE BUS CONTROL - DESCRIPTION AND OPERATION

1. General

- A. There are three AC tie switches on the **electrical** system control panel (EPCU). There is one for each of the bus tie relays (BTR)'s. There are two **lights** in **each** of the AC tie switches.
- (1) The ARM light.
 - (2) The OFF light.
- B. The two lights are **off** when the related bus tie relay (BTR) is **closed**, or if the Dual Land is on. The generator control unit (GCU) makes one of the lights come on when its **related BTR** is not closed.
- C. With the BTR not closed, ac tie switch armed (ARM), and Dual Land not selected, the **ARM** light comes on.
- D. With the BTR not closed, ac tie switch not armed, and Dual Land not selected, the OFF light comes **on**.

2. Bus Tie Relay Control Logic

- A. The generator control unit (GCU), makes it related bus tie relay close and open (trip), **as** necessary. This permits correct electrical system operation. The GCU uses these signals to control BTR operation.
- (1) DP FAULT - The GCU or the electrical power control unit (EPCU), measures system conditions. Then it makes a differential protection (DP) signal as necessary.
 - (2) BTR TRIP REQUEST - The GCU or EPCU **make** this signal to set correct system configuration.
 - (3) AC TIE SWITCH ARM LATCH - The GCU makes this signal from manual operation of the ac tie switch on the electrical system control panel (ESCP).
 - (4) BTR PROTECTIVE TRIP - The GCU measures system conditions to make the signal to trip the BTR as necessary.
 - (5) BTR CLOSE REQUEST - The GCU or EPCU make this signal to set the correct system configuration.

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- B. The GCU opens the BTR when one or more of these conditions occur:

DP FAULT
BTR TRIP REQUEST
AC TIE SWITCH not ARMED
BTR PROTECTIVE TRIP

- C. The GCU closes the BTR when all of the conditions that follow are present:

No DP FAULT
No BTR TRIP REQUEST
AC TIE SWITCH ARMED
No BTR PROTECTIVE TRIP
BTR CLOSE REQUEST

- D. The trip and close coil interface circuits make the correct voltage to operate the relay coils.

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