

Attachment 6

Diablo Canyon Power Plant  
Maintenance Procedure E-51.7A  
"Westinghouse DB-50 Circuit Breaker Repair"

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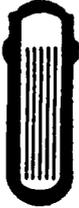
## Pacific Gas and Electric Company

NUMBER MP E-51.7A

REVISION 0

DATE 3/1/85

PAGE 1 OF 4



DEPARTMENT OF NUCLEAR PLANT OPERATIONS

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

ELECTRICAL MAINTENANCE PROCEDURE  
 TITLE: WESTINGHOUSE DB-50 CIRCUIT BREAKER REPAIR

**IMPORTANT  
 TO  
 SAFETY**

APPROVED: \_\_\_\_\_  
 PLANT MANAGER DATE

SCOPE

This procedure establishes the method and requirements for replacement of the Westinghouse Type DB-50 Circuit Breaker Undervoltage Trip Attachment. This procedures and changes thereto require PSRC review.

PREREQUISITES

1. Obtain and check clearance on respective breaker.
2. Remove breaker from cell.
3. Establish Housekeeping Zone 4 per Administrative Procedure C-10.

PRECAUTIONS/LIMITATIONS

1. When the breaker is charged, keep fingers and hands away from main and arcing contacts and operating mechanism.
2. Adjustments to the reactor trip and bypass breakers beyond those specified in the procedure are not authorized without further approval.
  - a. Contact Electrical Maintenance Engineering for technical guidance.

PROCEDURE

1. Remove the middle arc chute to expose the center pole of the breaker.
2. Disconnect the two leads from UV coil under the circuit breaker platform and remove the mounting screw which secure the UV attachment to the circuit breaker. Remove the UV attachment and retain the hardware for re-use.

DIABLO CANYON POWER PLANT UNIT NO(S)

1 AND 2

NUMBER MP E-51.7A

REVISION 0

DATE 3/1/85

PAGE 2 OF 4

TITLE: WESTINGHOUSE DB-50 CIRCUIT BREAKER REPAIR

3. Inspect the new UV attachment for proper identification (style number), physical condition, and cleanliness. It should be clean and undamaged.
  - a. If sticky or gummy substances are present on the linkage clean with 190 proof Ethyl Alcohol and use it sparingly.
  - b. Lubricate the UVTA with Westinghouse Part No. 53701GW in accordance with MP E-51.7.
4. On the UV attachment, loosen the pivot locking screw, unlock and withdraw the set screw on the reset lever arm to completely collapse the adjustable reset arm.
5. Operate the UV attachment manually by depressing the reset arm to cause the latch to engage. (This action charges the spring actuated trip lever.) Then slowly release the pressure on the reset arm. After suitable movement of the reset arm, the UV latch should disengage, permitting the trip lever to snap from the charged to the discharged position. The latching and unlatching operations should be smooth and friction-free. Repeat the operation several times. If the operation is sluggish or sticky, do not use; return the attachment to the factory.
6. Place the UV attachment over the extreme right hand side of the breaker platform as viewed from the operating side. Pass the UV coil leads through the grommet in the platform and position the UV attachment so that the trip lever is under the breaker trip bar. Align the holes in the base of the UV attachment with the holes in the breaker platform. The hole in the platform nearest the trip bar is a tapped hole. Using a 5/16-18 x 0.5 long Filister Head screw and lockwasher, secure the UV attachment to the platform. Do not tighten. The hole nearest the front of the breaker platform is a clearance hole; align with the rear hole on the UV attachment base and secure with a 1/4-20 x 1.0 long Pan Head screw, flatwasher, lockwasher, and nut underneath the platform while maintaining a parallel position of the UV base with the edge of the platform. Then tighten the 5/16-18 Filister head screw. Re-check tightness of hardware.
7. Connect the coil leads to the original terminal points. No special polarity is required. Care should be exercised to provide tight connections and proper insulation.

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

NUMBER MP E-51.7A  
REVISION 0  
DATE 3/1/85  
PAGE 3 OF 4

TITLE: WESTINGHOUSE DB-50 CIRCUIT BREAKER REPAIR

8. Adjust the UV reset arm by turning the adjusting screw clockwise until the UV latch sets up. This will be accomplished by an audible click sound. Turn the adjusting screw one additional turn and tighten the adjusting screw locking nut and the pivot locking screw. With the UV latch set, there should be a gap of 1/32 to 3/32 inch between the UV trip lever and the breaker trip bar.
9. Apply pressure manually to the moving contact member of the center pole in the closing direction until the UV attachment unlatches to discharge its tripping lever (accompanied by loud snapping sound). Then slowly relax the moving contact pressure permitting the circuit breaker to slowly return to the open position. The UV attachment should be observed to reset (audible click sound) just before the final open position of the breaker is reached. It is equally important not to significantly over-adjust the UV reset arm. Once a final setting has been obtained, securely lock the UV reset arm adjusting screw and the pivot locking hardware.
10. Insert the manual closing handle and, with the UV attachment deenergized, attempt to close the circuit breaker. The circuit breaker should trip free.
11. Using a temporary restraint to hold the reset lever of the UV attachment, close the circuit breaker manually. Then slowly relax the restraint on the UV reset arm. Movement of the reset arm should be smooth and without hesitancy with breaker trip occurring before the UV reset arm touches the breaker cross bar. When temporarily restraining the UV reset lever and releasing it, keep hands and tools away from moving parts of the circuit breaker to avoid personal injury or damage to the equipment. This temporary restraint check may be repeated several times to be sure there is no friction in the UV attachment or hesitancy in its operation. Remove the temporary restraint immediately after these checking operations have been made.
12. Install the arc chutes before returning the circuit breaker to service.
13. Verify that all tools, weights, etc., are removed from the breaker.
14. Test the breaker per MP E-51.7 for the following:
  - a. UVTA Dropout Voltage
  - b. UVTA Response Time

DIABLO CANYON POWER PLANT UNIT NO(S)

1 AND 2

NUMBER MP E-51.7A

REVISION 0

DATE 3/1/85

PAGE 4 OF 4

TITLE: WESTINGHOUSE DB-50 CIRCUIT BREAKER REPAIR

15. Replace breaker in cell. Verify that the breaker is placed in the correct cell. Do not interchange.
16. Report off clearance. Notify Shift Foreman that equipment is available for post-maintenance testing.

REFERENCES

1. Reactor Trip Switchgear Maintenance Program - DB-50 Reactor Trip Switchgear - by E. Reed, N.E. Stoyanoff and E. Vogeding.
2. Maintenance Procedure E-51.7.