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**CORRECTION FOR FAULTY OPERATION
OF MERCURY SWITCHES**

Correction for Faulty Operation of Mercury Switches

For approximately the first two years of operation of the Trinity Plants, problems were experienced with the units tripping off or locking out due to false operation of the mercury switches. This trouble was first experienced by the Lewiston Construction Office personnel before these plants were transferred to operation and maintenance status.

Investigation of this repetitive problem disclosed that operation of these mercury switches (thrust bearing oil level-, turbine bearing oil level, thrust and lower guide bearing oil temperature switches, and occasionally others) was initiated by vibration. This vibration was greatest as the units were synchronized on the line and as the units passed through rough loading ranges. The troubles initiated by rough synchronizing were corrected by proper adjustment of the automatic synchronizer.

It was found that the mercury switches were mounted practically flat and heavy vibration caused

the mercury to splash, momentarily closing the contacts. Anti-vibration type mercury switches were purchased by the Lewiston Office for the thrust bearing oil high and low level interlocks on each generator as these were the switches that had caused the greatest number of false operations. The anti-vibration mercury switches have been very satisfactory after minor adjustment on the slope of the mercury tube.

False operation of the remaining mercury switches has been corrected by relocating some of the switches to locations where they are subject to less vibration and by adjusting the mounting to increase the slope of the mercury tube to prevent the mercury from splashing. Therefore, it has not been necessary to replace any of the remaining mercury switches with the anti-vibration type.