ENCLOSURE

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
DIESEL GENERATOR TURBOCHARGER LUBRICATION
NCR MEB 79-26
10 CFR 50.55(e)
FIRST INTERIM REPORT

Description of Deficiency

This deficiency was reported by the diesel manufacturer, Electro-Motive Division (EMD) of General Motors, to TVA's contractor for the emergency diesel generators, Power Systems a division of Morris-Knudsen. Power Systems subsequently reported this deficiency to TVA. This deficiency was also reported to the NRC, which issued IE circular No. 79-12. The deficiency occurs when the diesel generator has been operated long enough for the lube oil to reach operating temperature, shutdown, then restarted between 15 minutes and 3 hours. During this period, if a restart is attempted, damage to the diesel engine turbocharger thrust bearing may occur. This could lead to failure of the turbocharger and the emergency diesel generator.

The cause of this deficiency appears to be related to the "soakback" pump which is designed to supply lubrication to the turbocharger bearings during standby conditions and to keep the accessory lubricating oil system primed to support a fast start. Following operation of the diesel generator the viscosity of the lubricating oil is such that the accessory lubricating oil system does not receive any oil, therefore repeated restarts during the period of 15 minutes to 3 hours following a hot shutdown of the diesel generator can cause engine damage due to lack of prime oil system pressure. Occasional instances of restart during these periods are inconsequential. However, repeated unneccessary restarts for purposes of testing or machinery exercise during the period of 15 minutes to 3 hours after shutdown needlessly accelerates wear and detracts from total engine life.

TVA considers this deficiency reportable because it could lead to reduced reliability and availability of the emergency onsite power source which is required to ensure that the plant can reach and maintain a safe shutdown under all conditions.

Corrective Actions

Other TVA plants that have EMD diesel engine driven generators include Hartsville, Phipps Bend, Watts Bar, and Browns Ferry. These other nuclear plants are presently being investigated to determine whether or not they are affected by this deficiency.

The operating staff at Sequoyah has been cautioned not to start the diesel generators unneccessarily between 15 minutes and 3 hours following shutdown from a previous run in which the engine has reached full operating temperature. Additional corrective actions are being investigated by EMD, Power Systems, and TVA. These corrective actions will be detailed in a subsequent report on this deficiency.