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February 18, 1986

J. D. KINGSLEY, JR.

VICE PRESIDENT, NUCLEAR OPERATIONS

U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N. W., Suite 2900
Atlanta, Georgia 30323

Attention: Dr. J. Nelson Grace, Regional Administrator

Dear Dr. Grace:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Special Report 85-009/1
HPCS Diesel Generator 13,
Generator Failure
AECM-86/0048

The event described below was previously reported on August 6, 1985, via Special Report 85-009/0. The following is submitted as an update to Special Report 85-009/0 to provide additional information as a result of vendor inspections.

On July 13, 1985, at 0315 while maintenance technicians were performing "HPCS Diesel Generator 13 Functional Test", 06-OP-IP81-M-0002, HPCS Diesel Generator 13 was stopped by the operator when sparks were observed coming from the generator bearing end cap.

Inspections revealed radial movement of the shaft end had allowed contact between the shaft and bearing end cap. This allowed circulating currents to be established with resultant sparks and overheating.

Close inspection revealed a low spot in the insulation under the bearing inner race which allowed excessive radial movement of the shaft. The diesel generator was declared inoperable and the damaged generator was replaced.

The diesel generator was out of service for 9.5 days. The July 13th diesel start was successful and was intentionally terminated without loading; therefore, this is considered an invalid failure and the surveillance test interval remains at 14 days in accordance with the test schedule of Regulatory Position C.2.d of Regulatory Guide 1.108.

The failed generator was shipped to the General Electric (GE) Service shop for further inspection and final repair. The epoxy/glass insulation material was analyzed in regards to the specific application used in the failed

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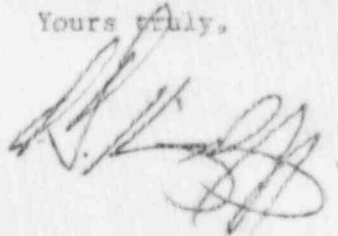
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generator. GE-NEBO Engineering concluded from the analysis that a design deficiency exists for this specific type of generator. The design deficiency results from a combined creep-fatigue mechanism of the insulation (epoxy-glass composite) between the generator shaft and the inner bearing race.

The generator is being repaired utilizing a redesigned bearing-to-pedestal housing insulation location. A steel sleeve is being placed at the previous insulation location on the generator shaft. GE-NEBO also estimated a Mean Time To Failure (MTTF) of the HPCS generator presently installed to be approximately 270 operating hours. This generator will be replaced with the repaired and modified generator during the upcoming first refueling outage.

The generator was originally manufactured by Electric Products, Inc. and is a 4.16 KV, 3 phase, 60 hertz, 900 RPM, Type L-11022, serial number 17312216/217. General Electric concluded that the failure is "Germane to Safety" and that a Reportable Condition under 10CFR21 does not exist. This report is submitted pursuant to Technical Specification 4.8.1.1.2.

Yours truly,



ODK:bms

cc: Mr. T. H. Cloninger
Mr. R. B. McGehee
Mr. N. S. Reynolds
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