



# MISSISSIPPI POWER & LIGHT COMPANY

*Helping Build Mississippi*

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

July 30, 1984

NUCLEAR LICENSING & SAFETY DEPARTMENT

Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station  
Units 1 and 2  
Docket Nos. 50-416 & 50-417  
License No. NPF-13  
File: 0260/L-860.0/M-018.0  
Supplemental Information  
on the Division I, TDI  
Diesel Generator  
Inspection  
AECM-84/0401

On July 26, 1984, while performing routine maintenance on the Division I TDI diesel engine following the break-in run and NRC required testing, water was observed coming from the open cylinder cock on the number (7) left bank cylinder head. The water was sampled and the source determined to be the diesel engine jacket water cooling system.

A boroscope inspection was made of the intake ports and the combustion area of the cylinder. The intake ports were found to be clean with no water present while water was observed covering one half of the piston surface on the lower side. During subsequent removal of the head, the right exhaust valve port was observed to be full of water. Inspection of the head gaskets showed the gaskets to be in good condition with no signs of leakage through the gaskets. The valves were removed to allow a detailed inspection of the exhaust ports. Liquid penetrant developer was applied to the right exhaust port surface and penetrant was applied to the jacket water side of the head in the same area as the developer. Bleed through was immediate thereby confirming the presence of a through wall crack approximately (2) inches long in the right exhaust port casting surface between the valve seat area and the exhaust valve guide. The head is currently being replaced with a new head that has been subjected to magnetic particle, liquid penetrate, ultrasonic and visual inspections.

The failed head was an original head with approximately 1500 hours of operation. Of this amount, approximately 335 hours were at 100% load and 31 hours at 110% load.

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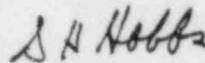
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To date, the investigation of nuclear application of TDI diesel engines by the TDI Diesel Owner's Group has reported no generic failures of this particular type; thus at the present time this is considered to be an isolated incident. Further investigation and evaluation of the incident is ongoing. If you have further questions, please advise.

Sincerely,



L. F. Dale  
Manager, Nuclear Licensing & Safety

LFD/sod

cc: Mr. J. B. Richard  
Mr. R. B. McGehee  
Mr. N. S. Reynolds  
Mr. G. B. Taylor

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