

~~RESTRICTED INFORMATION~~
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TO: C. L. Coray

JOB: 884

405902

FROM: D. T. Robbins

RE: Failure of Cylinder Liners -
CMR Diesel Engines

DATE: February 18, 1953

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An examination of the reports from Smith-Emery Company which were received with your memo of 16 February appears to point to both the lube oil and the fuel oil as factors probably contributing to the failure of the cylinder liners.

It will be seen in the reports that the neutralization number (acid number) of the used lube oil (0.30) is three times that of the clean oil (0.10). Although tests to determine the neutralization value of oils are not necessarily conclusive, it is of interest to note that contamination of the lube oil by the fuel oil can increase the neutralization reading. This fact, together with the comparatively high sulphur content of the fuel oil (reported as 0.87%), appears indicative of the possibility that the combination of fuel oil and lube oil being used is at least contributing to the failure of the cylinder liners.

Mr. Escher transmitted by telephone the results of Smith-Emery's tests to Mr. Baker of National Metal & Steel Corp. Mr. Baker stated the analyses of the oils we are using are very similar to those for oils which had caused a condition similar to ours in another installation in the Pacific Area. In this other case, after intensive investigation it was found that the entire difficulty had been caused by the combination of a fuel oil, high in sulphur content, and a lube oil with very little additive, which is necessary to combat the formation of sulphuric acid. Mr. Baker further stated that recurrence of trouble appears to have been prevented in that case by changing to a lube oil with a high detergent content, and he recommended that we use an oil similar to RPM Delo.

Standard Oil Company of California was contacted and it was learned from their Mr. Beatty that a large number of the General Motors engines in the Los Angeles area are using Delo. It is Mr. Beatty's recommendation that we use RPM Delo "Special" in our engines.

On the strength of the above recommendations, and until definite information is forthcoming regarding the cause of failure of the cylinder liners, it is recommended by the Engineering Division that only a high detergent oil, similar to RPM Delo "Special", be used in our engines. In the interest of avoiding a possible

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW

DETERMINATION (CIRCLE NUMBER(S))

1. CLASSIFICATION RETAINED

2. CLASSIFICATION CHANGED TO

3. CONTAINS NO DOE CLASSIFIED INFO

4. COORDINATE WITH

5. CLASSIFICATION CANCELLED

6. CLASSIFIED INFO BRACKETED

REVIEWER: [Signature]

NAME: [Signature]

DATE: 7/28/94

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NATIONAL ARCHIVES
REPOSITORY PACIFIC SOUTHWEST REGION

COLLECTION RG 326 ATOMIC ENERGY COMMISSION

BOX No. 199624 (#608) A16334-326-65V0170

FOLDER JOB 884 PROJECT ENGINEERING FILE

HOLLAND & NARVER, Inc.
ENGINEERS

~~RESTRICTED~~

TO: C. L. Coray JOB: 884

FROM: D. T. Robbins RE: Failure of Cylinder Liners -
GMR Diesel Engines

DATE: February 18, 1953

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source of excessive maintenance expense, it is suggested the use of the high detergent oil be initiated as soon as possible.

DTR:WPE:ih

D. T. Robbins

cc: Constr.-Oper. Div.
Project Engr. File ✓
W. F. Escher
Engineering File
Central File

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