



**Commonwealth Edison**

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May 17, 1988

Mr. T. E. Murley, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC. 20555

Attn: Document Control Desk

Subject: Braidwood Unit 1 and 2  
Limiterque Operator Lubrication  
NRC Docket Nos. 50-456 and 50-457

Reference: (a) April 11, 1988 L.O. DelGeorge letter to T.E. Murley

Dear Mr. Murley:

The purpose of this letter is to clarify and provide correction to information documented in reference (a). Attachment 1 to reference (a) provided the "Lubrication Contamination Evaluation". On page 10 of Attachment 1, the mixtures of virgin grease were listed that would be penetration tested to provide additional insight on the potential affects of mixing Nebula EP0 and EP1 with Sun 50 EP. Tables 1-3a and 1-3b of Attachment 1 provided the results of this testing and showed that only minor changes existed in penetration resistance as a function of mix ratio.

Upon performing a reverification in this area, because the penetration results were lower than expected, Commonwealth Edison has identified that the grease mixed with the Nebula EP0 and EP1 was Sun 742 EP and not the Sun 50 EP as indicated. As such, the penetration test results are representative of mixtures including Sun 742 EP.

An evaluation was made as to the significance of this deviation and the results were reported to the NRC staff on May 10, 1988 via a teleconference.

The 742 EP and 50 EP are both lithium based greases. However, the soap types, EP agent and NLGI grades are different so a correlation between 742 EP and 50 EP penetration results can not be reasonably made. Therefore, new samples of grease mixtures, made up of Nebula EP0 and EP1, and Sun EP 50, have been mixed and penetration tested per ASTM D1403.

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The results of the new grease mixture testing are provided in the attached updated Tables 1-3a and 1-3b for the EPO and EPl, respectively. The penetration results are representative of that which would be expected for EPO and EPl mixed with Sun 50 EP.

The Sun 50 EP was obtained from spare limitorque operators in storage at Braidwood, that are of the same vintage and have the same grease as the installed Braidwood operators. In addition, some grease from stores which was verified to be Sun 50 EP was added to obtain the quantities necessary for testing.

Please address any questions concerning this matter to this office.

Very truly yours,

*F. B. Lentine*

*for* S. C. Hunsader  
Nuclear Licensing Administrator

/klj  
att.

cc: S. Sands (NRR)  
W. Forney (RIII)  
Braidwood Resident Inspector  
4589K

Table 1-3a

Nebula EP0/Sun 50 EP

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	Penetration <u>Resistance</u> (1)
MIXTURE Constituents	Test (2)
100% EP0 / 0% Sun	377
98% EP0 / 2% Sun	384
95% EP0 / 5% Sun	384
75% EP0 / 25% Sun	354
50% EP0 / 50% Sun	314
25% EP0 / 75% Sun	292
5% EP0 / 95% Sun	298
2% EP0 / 98% Sun	298
0% EP0 / 100% Sun	309

(1) Note test repeatability is in the range of  $\pm$  three points

(2) Based on penetration test (ASTM D1403)

Table 1-3b  
Nebula EP1/Sun 50 EP

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	Penetration <u>Resistance</u> (1)
MIXTURE Constituents	Test (2)
100% EP1 / 0% Sun	313
98% EP1 / 2% Sun	317
95% EP1 / 5% Sun	317
75% EP1 / 25% Sun	296
50% EP1 / 50% Sun	310
25% EP1 / 75% Sun	299
5% EP1 / 95% Sun	305
2% EP1 / 98% Sun	305
0% EP1 / 100% Sun	309

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(1) Note test repeatability is in the range of  $\pm$  three points

(2) Based on penetration test (ASTM D1403)

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