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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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January 19, 2009

Reply to:
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ASTM D02.B0.03 L-37 Surveillance Panel Members and Guests:

Attached for your review and comment are the unconfirmed minutes of the:

 November 12, 2008 L-37 Surveillance Panel Meeting conducted at the PRI Headquarters, Apollo Room, Warrendale, PA.

Please direct any corrections or comments to my attention.

Sincerely,

Donald T. Bartlett, Chairman L-37 Surveillance Panel

Attachments

Report of Meeting L-37 Surveillance Panel Warrendale, PA PRI Apollo Room

November 12, 2008

<u>Sign-in/Review of Agenda & Membership:</u> The meeting was called to order at 08:35 a.m. The sign-in sheet is included as <u>Attachment # 1</u>. Joining via teleconference were, from Dana; Mr. Miller, Guzikowski, Fett, and Ramsey. <u>Attachment # 2</u> is the PowerPoint presentation handout provided prior to the meeting. The chairman led the panel through an agenda review (se slide 2, attach 2). There were no changes to the agenda.

The membership list was reviewed with no requests for changes (slide 3, attach 2).

Approval of Minutes:

October 30, 2008 SP Meeting.

Motion # 1 \Rightarrow Mr. Koehler/second Mr. Smith to approve the minutes as presented. Motion for approval was unanimously with a vote of 6 for, 0 opposed, and 0 abstentions.

Summary of Meeting Discussions

Reblend of TMC 152 and 153 – TMC - The current situation is as follows (Slide 4, attach 2):

- On hand at TMC we currently have TMC 153 →79 gallons and TMC 152→97 gallons left.
- TMC 152 can be re-blended. TMC was asked to pursue with the supplier.
- TMC 153 <u>cannot</u> be re-blended and will no longer be available. TMC was asked to contact the supplier for an alternate replacement fluid.
- We can change the rate of assignment of 152 and 153 to assign only 25% of the time instead of 33% of the time and that will extend life approximately a year and a half?

Motion # 2 \Rightarrow Mr. Koehler/Second Mr. Smith made a motion to reduce/assign the use of TMC's 153 and 152 for calibration to 25% of the time and TMC 155 to 50 percent of the time.

With respect to TMC 153 replacement, it was suggested that the TMC also ask the supplier for viscosity grade, performance credentials, relationship between TMC 153, etc. It would also be preferable to have field data. The motion passed with a vote of 5-0-1.

Dana Answers to Lab Questions and Hardware Order Plans — See Slides 5-15, attach 2):

• The chairman led the group through the slide presentation of previous decisions made at the October 9th Panel teleconference (slides 5 – 8).

- 2) Mr. Sullivan Dana has been making this hardware since 1985. This test has been around for 30+ years. With respect to the recent events, these are the first two batches that have been rejected. Can't you see that this is an unusual event?
- 3) Mr. Lind Something has changed, with the one batch exception, we haven't seen broken teeth.
- 4) Mr. Gropp With ordering a new batch, is there anything that will be different in the manufacturing process? Yes we know that there will be differences, it will not be made exactly identical. We must go back to the 2005 batch, duplicate it as close as possible.
- 5) Several commented that it was time for Dana participate in a sharing of the process cost and provide a warrantee.
- 6) Mr. Bartlett Asked if the labs could rebuild their own axles? Mr. Lind stated he has serious doubts on this; different builds could essentially create different batches.
- 7) Dana If labs agree to use Maumee, understand a schedule will need to be set and it will take considerable time.
- 8) Mr. Koglin Stated that the Labs should go to one place and general consensus was that they needed to be built in one place.
- 9) Mr. Ramsey reconfirmed that there should be some form of a small pilot build, and testing, say 10 to 15 per lab before Dana and industry proceed to retrofit all axles. It was also the preferred that all steel and lubriting be completed before retrofitting axles.
- o **Attachment # 3** is a copy of the letter written by the labs as directed at the October 30 panel teleconference. It was dated November 3rd, 2008.
- o **Attachment # 4** is a copy of the Dana response to the letter.
- Outcome 3 (slides 14 & 15) Binding PO's agreements and other discussion points were:
 - o Binding PO's due November 21st.
 - Labs should consider the current order to last approximately 18 months?
 - Labs and Dana agreed that the next opportunity to place batch orders would be the summer of 2009 for next batch
 - o Mr. Koglin proposed that it is time to form a group to look at L-37-1 options.
- **TMC Lab Visits** With respect to Section 8.2.6 Mr. Lind reported that all 4 labs are not compliant and are not performing the defined process the same way. If we're not going to do it, let's change the procedure as it impacts both the L-42 and L-37.

Action Item ⇒ Bartlett, Koglin, Lind - Agreed to work on a proposal to be forth coming.

Being no further business, Mr. Smith/second Mr. Koglin motioned to adjourn the meeting at 11:23 a.m.

Respectfully submitted,

Donald T. Bartlett

L-37 Surveillance Panel Chairman

Meeting Date: November 12, 2008

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Attachment
Page Page 1 of 5
Reference 2-37

Meeting Date: November 12, 2008

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Reference

3

Meeting Date: November 12, 2008

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Page Page 3 of 5
Reference 4-37

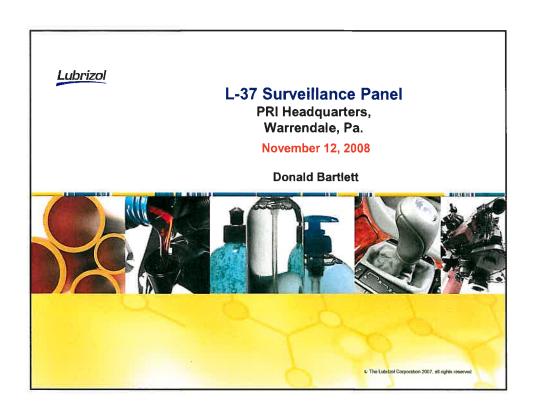
Meeting Date: November 12, 2008

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Meeting Date: November 12, 2008

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Jim Linden GMR Research and Development

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Bruce McGlone ArvinMeritor Materials Engineering

Salvatore Rea Infineum

Dale Smith Intertek-PARC Technical Services

Paula Vettel D.A. Stuart Company

Total 15 Voting Members

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Attachment 2 Page 148 Reference 2-37

L-37 SP Agenda

- I. Call to order
- II. Review Membership and Agenda
- III. Approval of meeting minutes
 - ✓ October 30, 2008
- IV. Reblend of TMC 152 and 153 TMC
- V. Outcomes from October 30 Panel Meeting
- VI. New Business?
- VII. Adjournment

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Reblend of TMC 152 and 153

- TMC 152 97 gallons left
- TMC 153 83 gallons left
- TMC 152, 153, & 155 assigned 33 % of time
- Proposal to preserve reference fluids
 - Change / Assign TMC 155 50 percent
 - Change / Assign TMC 153 25 percent
 - Change / Assign TMC 152 25 percent

MOTION # 2 BK DS

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Attachment 2
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Reference 1.37
11/12/08

<u>Lubrizol</u> 2008 Hardware Order Information Axle **Total** Ring Pinion **Type Order** Code <u>Code</u> <u>Labs</u> Lub - Retrofit 974 P4L870A V1L500 Lub - New 234 P4L870A V1L500 2 Plain 1084* P4T813 V1L500 3 Total 2292 * Additional order of Plain Axles made

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Review of October 9, Panel Motion

- Dana to immediately begin the process of manufacturing a new batch of pinions and rings
- Hardware should be manufactured using the same specifications for metallurgy, hardness, case depth, surface profile, etc. as was used in the V1L417/P4L792 batch of non-lubrited hardware.
- The intent of the Panel is that a portion of this batch will remain non-lubrited, and that a portion of this batch will be lubrited.

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Attachment 2

Page 3 6 6 1-37

| Till 2 | 08

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Review of October 9, Panel Motion

- More specifically:
 - a sufficient quantity of pinions and rings should be manufactured to allow for the V1L500/P4T813 batch of non-lubrited hardware to be retrofitted
 - a sufficient quantity to be lubrited so that they may be used to retrofit the V1L500/P4L870A batch of lubrited hardware (both the new and the retrofitted subsets of this batch)

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Review of October 9, Panel Motion

- All companies who intend to purchase a portion of this new batch of pinions and rings are to provide Dana:
 - with an initial indication of the size of their order by Friday, October 24. Only 2 responded
 - Formal PO's by Friday, October 31. now delayed
 - Dana provide the Surveillance Panel with a projected date for the availability by Friday, November 7. ???
 - vote was 6 0 1.

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Attachment 2
Page 446
Reference 2-37

Hardware Decisions to Date

- Panel meetings held weekly since August 13th
- Hardware exhibits a challenge, broken teeth & spalling issues
- Many attempts made to alter current operating procedure to make the hardware usable.
- Panel minutes are current & detail all decisions & actions
- Last Panel meeting was October 30th
- There were 3 outcomes

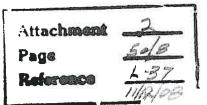
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Outcome 1

- The panel recommends that we stop all standard full test torque and all reduced test torque testing for all:
 - non-lubrited (batch code P4T813/V1L500),
 - new lubrited (batch code P4L870A/V1L500),
 - retrofit lubrited (batch code P4L87A/V1L500)
- All three gear batches are now officially rejected
- Vote 5 1 1

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Questions of Dana on Outcome 2

- 2. Will Dana cover the cost of shipping axles for items in item (b) like they did for item (a)? Note: The labs were asked to pay for return shipment after retrofit?
- 3. Is it the industry understanding that Dana and labs will work together to detail some form of pilot testing before final assembly?
- 4. Please detail for us the timing for the above, respectively?

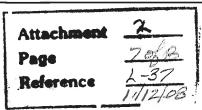
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Outcome 3

- Instead of requiring binding PO's by October 31, change the date to November 21
 - A request for Mr. Ramsey to be physically present at this Panel meeting
 - Miller and others from Dana will attend via teleconference (Pappademos, Sullivan, and Basset)
 - Labs expressed several concerns
- Vote of 6-0-1.

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Lab Planning for PO's

- Ordering retrofit Lubrited Ring and Pinions
- Ordering retrofit Non-Lubrited Ring and Pinions
- When will the industry be placing the next order for:
 - New Lubrited hardware?
 - New Non-Lubrited hardware?

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Since the August SP Meeting

- 2 Lab TF Teleconference Calls
- No HTF Facility Visit
- 9 SP Teleconference Calls
- Dana
- TMC
- Labs

Thank You!

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Reference L-37
11/12/08



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November 3, 2008

Dear Gentlemen, (Brazeau, Ramsey, Miller, Fett, Guzikowski)

At the direction of the L-37 Surveillance Panel during its October 30, 2008 teleconference meeting several outcomes occurred. 1) There are three different gear batches that exist which were officially rejected in their entirety by Surveillance Panel. 2) The four labs were tasked to teleconference on Monday, November 3rd to detail specific laboratory questions to Dana representatives. As we all prepare for the ASTM Surveillance Panel meetings in Warrendale, PA on November 12, we understand that your Mr. Bill Ramsey will be in attendance and answers to the below questions will help the industry move forward in a timely manner.

Note that one of the three batches (2006 Lubrited P4L816/B6L566) was under warrantee by Dana and being retrofitted with new ring and pinion sets (2007 Lubrited P4L870A/V1L500). The industry worked with your engineering staff to make several attempts to make the hardware respond favorable, i.e., shorted and lengthened test hours, a modified contact pattern loading, and three versions of contact stress reductions of 7, 11, and 14 %. All attempts essentially yielded less than desirable expected performance to proven industry reference fluids.

Presuming that Dana will be producing new ring and pinions we have the following questions needing answered in preparation for tendering binding PO's by November 21:

1) With respect to retrofitting all three hardware types:

- a) Will Dana continue to cover the full cost for ring and pinion sets and retrofit process of the retrofit lubrited (was 2006 Lubrited P4L816/B6L566 and now 2007 Lubrited P4L870A/V1L500) as previously agreed too?
- b) Will Dana cover the full cost for ring and pinion sets and retrofit process of the:
 - First time rejected new non-lubrited 2007 P4T813/V1L500?
 - First time rejected new Lubrited P4L870A/V1L500)?
- 2) Will Dana cover the cost of shipping axles for items in (b) like they did for item (a)? It is our understanding that the labs are only paying for return shipment after retrofit.



- **3) It is the industry understanding** that Dana and labs would work together to detail some form of pilot testing before final assembly.
- 4) Please detail for us the timing for the above, respectively.

In closing, we thank the Dana representatives for their work and efforts with such a challenging process and look forward to discussions in Pittsburgh in two weeks. The Dana representative(s) and the laboratory representatives must come to the meeting prepared to make final decisions concerning the future of this testing hardware, both technical and financial.

Donald Bartlett

The Lubrizol Corporation Laboratory, L-37 Surveillance Panel Chairman

Brian Koehler

Southwest Research Institute Laboratory

Bustlett

Dale Smith

Intertek-Parc Laboratory Afton Chemical Laboratory

Cory Koglin

Cc:

L-37 Surveillance Panel Teleconference meeting minutes of October 30, 2008

Attachment 3
Page 2 of 2
Reference 1/1/12/08



November 7, 2008

Mr. Don Bartlett ASTM L-37 Chair

Dear Mr. Bartlett:

Dana Holding Corporation (Dana) appreciates the long term business relationship with the ASTM labs. For years Dana has supplied ASTM with axles to be utilized in their lubrication tests. However the current situation in which the ASTM labs have rejected the current L-37 axles is very concerning. Dana has expended exorbitant time and money to support the labs in an effort to utilize the current L-37 axles.

The Dana Warranty Policy states each new axle and components thereof shall be free from defects in material and workmanship under normal use and maintenance. Dana has ensured that all axle components, material specifications, assembly processes and functional tests are to print specifications. In consideration of these facts, Dana will not assume any costs related to the retrofitting or replacement of axles rejected by the ASTM labs. Therefore, the axles rejected by the ASTM labs are not warrantable as they are to print and specification. It has always been the Dana position that the axles supplied are the same as axles available for industrial use. The stresses generated by the ASTM L37 test are very severe. Dana must produce its gears to dimensional and metallurgical limits that can be measured before the product ships. Dana can not guarantee that these limits will always translate into a successful ASTM test. It is important that the ASTM labs understand this and that there will be variability with each batch produced.

For the pending gear set purchase orders from the ASTM labs there will be a mandatory sample batch approval required from the labs prior to completing the entire lot. Dana commits to producing gear sets as similar to the 2005 batch as possible, however will not provide any guarantee to that effect. The rebuild costs, including freight costs, will be the responsibility of the ASTM labs. The exception is the nine hundred seventy four (974) axles which are currently covered under a warrantable condition for the rebuild cost. The gear sets for the 974 axles must be purchased by the ASTM labs. The prototype lab in Dana Maumee has agreed to allocate resources to rebuild the axles. Dana Maumee will issue a quote for rebuild costs if the labs choose to utilize Maumee as the rebuilder. It should be noted the rebuild will require considerable time to complete due to the number of axles.

It is our desire to continue to work with ASTM with the current designs and materials and ensure our products are to design specification. We look forward to a continued long-term relationship with a leading driver in the industry.

Best regards, Bill Ramsey Attachment 4
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