

600

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
Lawrence Brenner, Chairman
Dr. George A. Ferguson
Dr. Peter A. Morris

DOCKETED
USNRC

'84 OCT 19 11:53

OFFICE OF SERVICE
DOCKETING & SERVICE
BRANCH

SERVED OCT 19 1984

In the Matter of
LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station,
Unit 1)

Docket No. 50-322-OL

October 18, 1984

ORDER CORRECTING TRANSCRIPTS OF
SEPTEMBER 10 THROUGH 19, 1984

The corrections jointly proposed by the parties for the transcripts of September 10-19, 1984, have been adopted by the Board with some modifications, as noted on the attached list of corrections which we hereby order.

Please note that where a single asterisk appears the Board has either modified a change proposed by the parties or has inserted a change which had not been listed. Some proposed changes have been deleted, which is shown by a line drawn through that change. The double asterisk change made by the Board was confirmed with Darla B. Tarletz, Esq., counsel for LILCO. Steps are being taken to have replacement corrected transcripts issued for September 10 through 19, 1984.

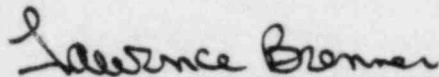
8410220074 841018
PDR ADOCK 05000322
T PDR

DS02

We wish to thank all the parties for their cooperative effort in getting these changes to the Board.

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD



Lawrence Brenner, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
October 18, 1984

Attachment: Transcript Corrections
for September 10-19, 1984.

SHOREHAM TRANSCRIPT CORRECTIONS

<u>TR. PAGE/LINE NO.</u>	<u>CORRECTION</u>
<u>Monday, September 10, 1984</u>	
21,922, line 3 *	Change " MC CARTHEY" to "MC CARTHY" (Please make a "global" search to change throughout transcript.)
" , lines 18-20 *	Insert between lines 18 and 20 under heading "LAY-INS" "Lunch Recess" and insert under heading "FOLLOWS PAGE NO." "21,985."
" , line 20 *	Insert "P.M." before "RECESS."
21,923-26 *	Change "21,950" under "RECEIVED" column to "21,949" on pages 21,923 through 21,926.
21927/7	Change "Board Staff." to "Board's left. Staff?".
21927/23	Insert "with Mr. Palomino" after "co-counsel".
21928/14	Insert "on behalf of the Staff" after "things"; change "didn't" to "did"; insert ", " after "them".
21928/16	Insert "on the conference call for some unexplained reason" after "unavailable".
21928/24	Change "heads" to "pistons".
21929/5	Insert "it" after "Pischinger".
21929/6	Change "and" to "that he".
21931/17	Insert "For" before "Judge"; insert ", " after "Ferguson"; change "only" to "also".
21931/19	Insert "only" after "needs"; change "needs" to "need".
21936/4	Change "If" to "We did".
21937/1	Change "material" to "immaterial".

<u>Page/Line</u>	<u>Correction</u>
29938/1	Change "McCarthey" to "McCarthy".
21938/18	Change "Alfred" to "Aachen".
21939/4, 13	Change "McCarthey" to "McCarthy".
21940/5	Change "McCarthey" to "McCarthy".
21940/8	Change "A F" to "AF".
21940/13	Change "F" to "AF"; change "E" to "AE".
21942/17	Change "answer:" to "answer,".
21942/18	Change "Line" to "Lines"; change "'grip'" to "'which'"; change "an" to "and".
21942/24	Change "copper" to "Koppers"; insert "an" after "experiencing".
21943/7	Change "adding" to "add".
21944/4	Delete "answer"; change "beginning at" to "begins after".
21945/20	Delete "Dr.".
21946/1, 8, 13, 14	Change "McCarthey" to "McCarthy".
21947/2	Change "not" to "in the".
21947/15	Change "to" to "and".
21947/23	Insert "," after "errata" and delete "," after "true".
21948/8	Change "McCarthey" to "McCarthy".
21948/11	Change "entitled" to "Regarding"; insert "Diesel Generators At" after "on".
21948/13	Change "including" to "included".

<u>Page/Line</u>	<u>Correction</u>
21949/4	Change "they" to "on my copy that I".
21949/23	Change "volumes" to "volume"; change "and" to "of".
21950	Following page 21950, the pleading entitled "Errata To Testimony On Behalf Of Long Island Lighting Company Regarding AE Piston Skirts" should be inserted instead of after the resume of Edward J. Youngling where the errata is currently bound in the testimony.
21951/5	Change "bindings" to "findings".
21951/7	Change "they" to "that" and "encompass" to "encompasses".
21952/12, 14	Change "McCarthey" to "McCarthy".
21953/16, 19, 22	Change "McCarthey" to "McCarthy".
21953/25	Delete "in the past".
21954/4, 11, 14	Change "McCarthey" to "McCarthy".
21954/11	Change "Pearson Peels" to "Stewart Stevensen".
21954/17	Change "post" to "opposed".
21954/19	Change "check," to "check of the".
21954/20	Change "or bit" to "orbit".
21955/5, 8, 11, 13, 21, 24	Change "McCarthey" to "McCarthy".
21956/2, 7, 13, 17, 21	Change "McCarthey" to "McCarthy".
21957/16	Change "McCarthey" to "McCarthy".
21958/3	Change "McCarthey" to "McCarthy".

<u>Page/Line</u>	<u>Correction</u>
21960/10	Change "both the" to "to".
21962/21, 23	Change "McCarthey" to "McCarthy".
21966/8	Change "manufacturer," to "manufacturing".
21968/20	Delete "Was".
21968/21	Change "there an" to "There was no"; change "?" to "."; change "," to ".".
21968/22	Change "He" to "he".
21972/24	Change "KHE" to "KHD".
21972/25	Change "Forschungsgesellschaft fur Energietechnik und" to "Klockner-Humboldt-Deutz, AG".
21973/1	Delete "Verbrennungsmotoren".
21974/16	Change "KHE" to "KHD".
21975/18	Change "resume'" to "resume".
21975/23	Change "is" to "in"; change "University's" to "University is the".
21976/21	Change "object" to "objection".
21976/22	Change "advised" to "advice".
21976/23	Change "So" to "See".
21978/11	Change "2.7" to "2 point 7."
21979/17	Insert "habilitation" after "indicated".
21980/4	Change "ability to look at" to "stability and growth of"; change "and" to "in".
21980/10	Delete "associates".
21980/16	Change "prefix" to "prediction".

<u>Page/Line</u>	<u>Correction</u>
21981/11	Change "prefix" to "prediction".
21981/20	Change "My" to "After my next".
21981/21	Insert ", it" after "statement"; delete "it is".
21982/20	Change "fit." to "fit,"; change "Within" to "within"; insert "." after "reason"; change "we" to "We".
21982/22	Change "the" to "another".
21983/21	Insert "," after "help".
21986/25	Change "ourselves" to "yourselves".
21987/1	Insert "We are" before "dealing"; change "who hear" to "here".
21988/5	Insert "AE and" before "AF"; change "groups" to "skirts".
21988/8	Change "mechanic" to "mechanics"; insert "of the" after "analysis".
21988/11	Change "in" to "and".
21988/12	Change "group" to "skirt".
21988/13	Insert "were" after "results".
21988/18	Delete "directed"; change "participation" to "participated".
21988/19	Change "strength" to "strain".
21988/20	Change "watts" to "what"; insert "were" after "strains".
21988/21	Insert "," after "skirts" and "itself".
21988/24	Change "studying" to "inserting".

<u>Page/Line</u>	<u>Correction</u>
21988/25	Change "line cylinders," to "cylinder liners and"; insert "." after "tests"; delete "and the".
21989/1	Delete line.
21989/21	Change "McCarthy" to "McCarthy".
21989/25	Delete "crack" following "design".
21990/1	Change "," to "."; change "whether" to "Whether".
21990/2	Insert "they" after "initiated,".
21990/3	Delete "No prediction."; change "Crack" to "Fracture"; change "a list" to "an analysis".
21992/17	Change "Also" to "We also".
21992/18	Insert "performed" after "have".
21992/18	Change "analyses run" to "analysis runs".
21993/8	Change "contemporary" to "confirmatory".
21993/10	Insert "there is" before "only".
21993/13	Insert "a" after "out,".
21993/14	Delete "changes"; change "final" to "finite".
21994/7	Change "AE" to "AF".
21994/13	Delete "report".
21995/6	Change "of" to "to"; change "break" to "brake".
21995/8	Insert "compared" after "as".
21996/11	Insert "of" after "skirt".

<u>Page/Line</u>	<u>Correction</u>
21996/12	Insert "," after "recall"; delete "was".
21996/23	Change "change" to "changes".
21997/1	Insert "a" after "of".
21997/4	Delete "a"; insert "as a" after "reacted".
21997/10**	Delete "and" and insert "in the" Delete "however" and insert "that"
22000/9	Change "that" to "regarding the".
22000/10	Delete "rigid wrist pin and"; insert "the" after "reality".
22000/16	Change "-- frequently" to "answer. Frequently".
22000/20	Change "conservativism" to "conservative".
22000/22	Change "this" to "there".
22000/24	Change "using" to "use".
22001/11	Insert ", as it does in" after "predicts"; insert "," after "case"; change "which is birth" to "growth".
22001/24	Change "infinite" to "finite".
22002/3	Insert "we" after "cases"; insert "a" after "used".
22002/6, 13, 18	Change "infinite" to "finite".
22002/13	Change "reanalysis" to "analysis".
22002/14	Delete "forward".
22003/5	Insert "a" before "better".
22003/9	Change "infinite" to "finite".
22003/17	Change "crowns degree" to "boundary".
22003/18	Change first "were" to "we".

** Per telephone conversation with Darla B. Tarletz, Esq., counsel for LILCO (10-17-84).

<u>Page/Line</u>	<u>Correction</u>
22003/19	Insert "that" after "decided"; insert "the" after "analysis".
22003/21	Change "two-pieced" to "two-piece".
22004/4	Change "on" to "in"; delete "program"; insert "the" after "and".
22004/7	Change "infinite" to "finite".
22004/10	Change "base" to "boss"; change "a" to "the".
22004/14	Change "McCarthey" to "McCarthy".
22004/20	Change "and" to "in".
22004/23	Change "prediction" to "precision"; change "to" to "of the".
22008/5	Change "that" to "this".
22010/5	Insert "to the" after "skirt"; insert "fixture" after "test".
22010/6	Insert "fixture" after "test".
22010/7	Insert "of" after "gathering".
22010/13	Insert "coat" after "stress".
22011/20	Change "Perry" to "Harry"; change "Shine" to "Shyne".
22012/8	Insert "the" after "on".
22013/4-5	Change "American Society For Testing And Materials" to "American Society For Non-Destructive Testing".
22013/13	Change "and the" to "NDE".
22013/19	Delete "That"; change "the" to "The".

<u>Page/Line</u>	<u>Correction</u>
22013/22	Insert "of" after "factor".
22014/6	Delete "on".
22014/7	Change "micro" to "predicted to grow".
22014/22	Delete ", ".
22015/20	Change "allocation" to "calculation".
22015/23	Change "saccular" to "cylinder".
22016/8	Insert "-K" after "delta".
22019/12	Change "structure" to "fracture".
22019/17	Change "merits" to "materials"; insert "on material points" after "detail".
22020/2	Delete first "going to".
22020/17	Change "LILCO" to "Suffolk County".
22021/11	Change "initiation" to "indications".
22021/16	Change "you did, you said" to "did you say".
22022/4	Change "that learned" to "learned that".
22022/23	Change "that" to "what".
22022/23	Change "the" to "your".
22023/14	Insert "iron" after "nodular".
22023/16	Change "perlitic" to "pearlitic".
22023/18	Change "nickel" to "tensile".
22024/4	Change "DADN" to "DA/DN".
22024/14	Change "216" to "2-16".

<u>Page/Line</u>	<u>Correction</u>
22024/15	Change "th" to "the".
22025/1	Insert "were" after "ligaments".
22025/3	Change "in" to "on".
22025/17	Insert "." after "crack".
22025/18	Change "than the" to "Then the".
22025/19	Insert "of" after "depth".
22025/23	Change "piston" to "pistons,".
22026/3	Change "that" to "had".
22026/4	Insert "by" after "yet"; delete "that".
22026/5	Insert "were" after "engines".
22030/3	Change "code" to "coat".
22030/15	Change "perlitic" to "pearlitic".
22030/16	Change "perlite" to "pearlite".
22031/4	Delete line and replace with "the DRQR, design review quality revalidation".
22031/5	Insert "I" before "reviewed".
22031/7	Change "piston --" to "pistons in".
22031/14	Change "within" to "with".
22032/18	Insert "not" after "was".
22032/11	Change "tip" to "tin".
22032/21, 24	Change "McCarthey" to "McCarthy".
22033/2, 10, 18, 22	Change "McCarthey" to McCarthy".

<u>Page/Line</u>	<u>Correction</u>
22033/3	Insert "Failure Analysis Associates was" after "also".
22033/11	Insert "did Failure Analysis Associates" after "only".
22033/12	Change "inspected" to "inspect".
22034/1	Change ", " to "."; insert "I" before "occasionally".
22034/5, 9	Change "McCarthey" to "McCarthy".
22034/19	Insert "would" after "basis"; insert "provide" after "probably".
22035/1, 15, 22, 25	Change "McCarthey" to "McCarthy".
22036/1	Delete ", "; insert "that would" after "fact"; delete "of" after "color".
22036/10	Change "McCarthey" to "McCarthy".
22036/13	Change "nominal" to "nominally"; delete "in"; change "indurance" to "endurance".
22036/15	Insert "." after "initiation"; change "in" to "In"; insert "analysis" after "growth"; change "thresholds." to "thresholds,".
22036/16	Change "Stress" to "stress".
22036/25	Change "Important" to "It is important"; insert "that" after "mind".
22037/5	Insert "at the" after "engine".
22037/14	Change "McCarthey" to "McCarthy".
22037/18	Delete "There"; change "at" to "At".
22038/5	Change "McCarthey" to "McCarthy".

<u>Page/Line</u>	<u>Correction</u>
22038/23	Change "apart" to "of parts".
22039/8	Change "pistons" to "regions".
22039/9	Insert "The" before "Statistical"; change "filix" to "fillets".
22039/18	Delete "and".
22039/19	Insert "they" after "still".
22040/1, 15, 20	Change "McCarthey" to "McCarthy".
22040/8	Change "the failure analysis" to "at Failure Analysis".
22040/24	Change "Kallup" to "Caleb".
22041/22	Change "we" to "he".
22042/1	Insert "element" after "finite".
22042/9	Change "McCarthey" to "McCarthy".
22042/18	Change "some" to "are"; change "--" to "a".
22042/19	Change "our" to "the"; change "the" to "a".
22043/3	Insert "and the" after "initiation".
22043/4	Insert "under" after "piston"; change "question" to "excess"; change "160" to "1670".
22043/6	Change "at" to "in"; change "in" to "at".
22043/22	Change "McCarthey" to "McCarthy".
22044/8	Change "defects" to "effects".
22045/15	Change "McCarthey" to "McCarthy".
22045/19	Change "current work other than" to "other current work on".

<u>Page/Line</u>	<u>Correction</u>
22045/21	Delete "to"; change "be" to "been", insert "that" after "skirts".
22045/25	Change "," to "in".
22046/7	Change "Also" to "We also".
22046/10	Change "work" to "works".
22046/11	Change "For" to "for"; change "Gro" to "Group".
22046/18	Change "conclusion" to "inclusion".
22046/20	Change "if" to "in".
22046/25	Insert "we felt it was" after "and"; delete "in".
22049/15	Change "Are" to "What are".
22049/20	Change "ask" to "add:".
22049/22	Delete "Judge Brenner" and continue with text of answer on line at 21.
22049/24	Change "ou." to "area".
22049/25	Delete "feature".
22050/2	Insert "on the" after "whole load".
22050/8	Change "incur" to "infer".
22051/11	Insert "to" after "referring".
22051/17	Insert ", we have" after "stresses".
22051/18	Delete "in".
22051/21	Change "on" to "in".
22051/25	Change "code" to "coat".

<u>Page/Line</u>	<u>Correction</u>
22053/4	Change "questionings" to "questions"; insert "plan" after "cross".
22053/19	Insert "plan" after "cross".
22053/22, 24	Change "McCarthey" to "McCarthy".
22054/1, 3, 8	Change "McCarthey" to "McCarthy".
22054/12, 20	Change "indurance" to "endurance".
22054/21	Change "doesn't" to "does"; change "of" to "to".
22054/24	Change "indurance" to "endurance".
22055/4	Change "Exhibit 28" to "Exhibit P-28".
22055/10	Change "N iron" to "pistons are".
22055/11	Change "536 we" to "536. We"; change "at" to "that"; insert "are" after "skirts".
22055/12	Delete "at".
22055/13	Insert "that" before "particular"; insert ", or," after "level"; change "A536 is" to "A536,".
22055/14	Change "the" to "are".
22056/7	Change "castings hence" to "castings." Hence,"; delete "or 100,000".
22056/8	Delete "ultimate, 70"; insert "100 designation for 100,000 ultimate" after "yield".
22056/15	Change "parts" to "properties".
22056/19	Change "," to "."; insert "We" before "characterized".
22056/21	Change "bottle" to "model".

<u>Page/Line</u>	<u>Correction</u>
22057/7	Change "of" to "were".
22057/7	Change "of" to "are".
22057/8	Insert "." after "cooled"; delete "of the"; change "both" to "Both".
22057/16	Change "range" to "varies".
22058/6	Change second "AE" to "AF".
22058/25	Insert "to" before "analyze"; insert "it is" after "piston".
22059/1	Delete "to range"; change "enable" to "use".
22059/2	Delete "to determine"; insert "for" before "the".
22059/19	Change "tape" to "taken".
22059/24	Change "four" to "for".
22059/24-25	Delete "the reason . . . the sample." and insert "that is the reason it specifies, for cast products, a standard size for the sample.".
22060/3	Insert "degree" after "extra".
22060/14	Insert "we" after "and".
22060/17	Change "and" to "of".
22061/14	Change "cracks" to "skirt".
22065/4-6	Delete the sentence "As we have testified . . . for analysis."
22065/25	Delete "in".
22066/25	Change "pressurizes" to "pressure".

<u>Page/Line</u>	<u>Correction</u>
22067/1	Change "keep" to "give".
22068/9	Insert "it" after "certainly".
22068/13	Delete "," after "top".
22068/15	Change "and" to "on".
22068/16	Insert "the" after "not".
22068/17	Insert "the" before "position".
22071/5	Change "bury" to "vary".
22071/18	Delete "the process and".
22071/19	Change "that" to "a".
22071/20	Change "operating" to "operation".
22072/17	Delete "and also performed".
22072/19	Change "engine" to "engines".
22072/20	Change "statistical" to "static".
22072/24	Insert "is" after "and"; delete "its"; change "at" to "in the".
22073/7	Change "mean effect" to "mean effective pressure".
22073/14	Change "at" to "on"; change "and" to "on".
22073/24	Change "BISTA" to "piston".
22074/11	Change "McCarthy" to "McCarthy".
22074/18	Change "1820" to "1620".
22075/9	Change "as entitled" to "pressure".
22075/11	Change "McCarthy" to "McCarthy".

<u>Page/Line</u>	<u>Correction</u>
22077/13	Change "McCarthey" to "McCarthy".
22078/8, 18	Change "McCarthey" to "McCarthy".
22079/5	Change "create" to "as great as"; delete "plus".
22079/15	Change "McCarthey" to "McCarthy".
22079/20	Change "Stone Weber" to "Stone & Webster".
22080/3, 6, 12	Change "McCarthey" to "McCarthy".
22081/4, 18, 21, 25	Change "McCarthey" to "McCarthy".
22082/10	Change "McCarthey" to "McCarthy".
22082/20	Change "factor" to "damage".
22083/2, 7, 10, 17	Change "McCarthey" to "McCarthy".
22084/1	Change "McCarthey" to "McCarthy".
22085/8	Insert "the" after "and"; change "the" to "that".
22085/9	Change "and" to "in".
22085/16	Change "cycle" to "cylinder"; change "McCarthey" to "McCarthy".
22085/24	Change "Johnstone" to "Johnston".
22086/1	Change "cycle" to "cylinder".
22086/2	Change "McCarthey" to "McCarthy".
22086/9	Insert "which is a" before "different".
22086/19	Change "Transducer" to "The transducer".
22087/11	Insert "that" after "watch".

<u>Page/Line</u>	<u>Correction</u>
22088/25	Change "read" to "real".
22090/4	Change "answer" to "after".
22090/3, 5	Change "Exhibit P-9" to "Exhibit P-5".
<u>Tuesday, September 11, 1984</u>	
22102/25	Insert "more than" before "one".
22106/18*	Change "wheel " to "value".
22112/15	Change "mccurdy" to "Mercaldi"; delete "(phoenetic)".
22113/25	Change "socket" to "cycle".
22114/6, 12	Change "sockets" to "cycles".
22114/21	Insert "which" after "combustion".
22117/25	Insert "it" after "subjects".
22118/10	Change "I" to "TDI".
22121/24	Change "piston 80" to "AE".
22124/13	Insert "and" after "stress".
22124/20	Change "that" to "there".
22125/11	Change "does it" to "is a".
22125/19	Change "T/A I" to "TDI".
22126/13	Insert "crown" after "conventional".
22127/14	Change "strengths" to "strains"; change "C" to "sub Z".
22127/15	Change "data" to "theta"; delete "which are known as"; insert "to" after "45".
22127/16	Change "strengths" to "strains"; change "l" to "I".

<u>Page/Line</u>	<u>Correction</u>
22127/17	Change "2" to "II".
22127/19	Change "and" to "in".
22127/24	Change "its" to "the".
22128/10	Delete "the".
22128/10	Delete "in".
22129/2	Change "its" to "the".
22130/5	Change "with" to "ring".
22131/20	Insert "of" after "volume".
22133/8	Delete "instead of the"; change "it" to "a".
22133/20	Change "317" to "3-17".
22134/24	Change "AQS" to "ksi".
22135/5	Change "KS I" to "ksi".
22135/20	Change "317" to "3-17".
22136/14	Change "through" to "to".
22137/11*	Change "160" to "160°".
22137/16	Change "ground" to "crown".
22138/1 *	Change "P" to "piece".
22139/10	Change "thermal" to "thermo-".
22140/11	Change "Deltas" to "to certain temperature deltas in the".
22140/13	Change "clarification" to "variation".
22141/14	Change "a natural" to "an actual".
22142/12	Change "." to ","; change "Keeping" to "keeping".

<u>Page/Line</u>	<u>Correction</u>
22142/15	Insert "ring" after "contact".
22142/18, 20	Change "KS I" to "ksi".
22143/17	Change "than the" to "under".
22147/9	Delete "23".
22147/17	Change "McCarthey's" to "McCarthy's".
22150/2	Insert "Judge Brenner:" and begin a new paragraph after "crown".
22153/7, 16	Change "Carl Smith" to "Karl Schmidt".
22154/9, 25	Change "Carl Smith" to "Karl Schmidt".
22155/8, 12, 18	Change "Carl Smith" to "Karl Schmidt".
22155/17	Change "temp-block" to "templug".
22155/21	Change "ground" to "crown".
22155/23	Change "ten blocks" to "templugs".
22159/13	Change "check" to "chance"; change "the" to "that".
22159/14	Change "failure analysis" to "Failure Analysis".
22159/15	Change "Dale" to "Gail"; delete second "McCarthey"; insert "a" after "is".
22160/18	Change "McCarthey" to "McCarthy".
22161/6	Change "24" to "before".
22163/11-12	Delete "213 BMEP at 450 rpm courses to 500.".
22164/24	Change "ten plugs" to "templugs".
22165/20	Change "1300" to "1500".

<u>Page/Line</u>	<u>Correction</u>
22167/1	Change "McCarthey" to "McCarthy".
22167/7	Change "sensitive" to "insensitive".
22167/8, 19	Change "modules" to "modulus".
22167/9	Change "rated" to "rate it".
22167/20	Change "elastance" to "elasticity".
22168/6	Change "uniformed" to "uniform".
22168/7	Change "to" to "do".
22168/8	Change "fibrin" to "firing"; delete "measure".
22168/15	Change "hypothesis" to "hypothesized"; delete "of".
22168/16	Change "crown" to "skirt".
22169/20	Change "McCarthey" to "McCarthy".
22172/11	Change "and" to "to".
22172/12	Change "propagated" to "propagate".
22173/4	Change "section" to "sectioned"; change "metal" to "metallographic"; change "piston" to "pistons".
22173/15	Change "tested" to "I testified"; change "grip" to "grit".
22175/6*	Change "DT" to "PT".
22175/19	Change "surface" to "subsurface".
22177/13	Change "fractured" to "fracture".
22178/8-9	Change "and stud blocks boss" to "in the stud boss area".
22178/21	Change "block" to "boss".

<u>Page/Line</u>	<u>Correction</u>
22178/22	Change "gage" to "gaged".
22181/6	Change "would" to "and".
22181/24	Delete "the"; change "experiment" to "experimental".
22182/4	Delete "and".
22182/5	Delete ", " after "stress".
22183/25	Change "deform the" to "deform. The ".
22184/13	Change "elastic" to "soft".
22184/24	Change "access" to "axis".
22201/11, 18	Change "signal" to "sigma".
22202/18	Change "AEF" to "AE".
22202/19	Insert "." after "skirt"; change "concentrating" to "Concentrating".
22202/24	Change "string" to "strain".
22202/20 *	Change "skirt. There" to "skirt, there".
22204/15	Change "questions" to "conditions".
22214/8	Change "introduce" to "increase".
22217/13	Change "indications" to "conditions".
22217/21	Insert "I am sure you" at end of line.
22217/22	Change "Please be courteous," to "said it to be courteous, but".
22218/6	Insert "it" after "analysis".
22218/19	Begin new paragraph and insert "Dr. Harris:" before "as"; change "as" to "As".

<u>Page/Line</u>	<u>Correction</u>
22219/3,17	Change "McCarthey" to "McCarthy".
22219/19	Change "string" to "bring".
22220/4, 7	Change "mechanisms" to "mechanics."
22220/5	Change "with, okay" to "with a crack".
22220/23	Change "McCarthey" to "McCarthy".
22221/4, 21	Change "McCarthey" to "McCarthy".
22222/23	Change "McCarthey" to "McCarthy".
22223/18, 24	Change "McCarthey" to "McCarthy".
22224/22	Change "McCarthey" to "McCarthy".
22224/23	Change ", size of initiated" to ", the size of an initiated".
22225/3	Change "conservativity" to "conservativism".
22225/9, 16, 20	Change "McCarthey" to "McCarthy".
22225/21	Change "growths" to "growth".
22225/23	Insert "fatigue" after "drive the" change "T" to "fatigue".
22226/11/21	Change "McCarthey" to "McCarthy".
22227/4	Change "Dr. Pischinger" to "Dr. McCarthy".
22227/11, 21	Change "McCarthey" to "McCarthy".
22227/17	Change "mechanisms" to "mechanics."
22228/7	Change "fracture" to "structure".
22228/20	Change "more" to "no".
22229/3	Change "And" to "An".

<u>Page/Line</u>	<u>Correction</u>
22229/25	Delete ", " after "mechanics".
22230/2	Change "mechanisms" to "mechanics".
22230/16	Change "mechanisms" to "mechanics".
22230/17	Change "McCarthey" to "McCarthy".
22231/16	Change "skirt and" to "skirt. And".
22231/19	Change "amount. Piston skirt; however" to "AE piston skirt. However".
22232/1	Change "McCarthey" to "McCarthy".
22232/13 *	Insert "we are" after "but".
22232/16	Insert ", " after "border line"; change "as brought out" to "as is brought out".
22233/18	Insert "if" after "similar,".
22233/20	Change "Friction" to "for instance".
22233/22	Change "T" to "fatigue".
22235/1	Change "?" to ".".
22236/20	Delete "that".
22237/15	Change "arrest of crack" to "arrested crack".
22238/5	Change "grow" to "go".
22238/10	Change "its" to "the".
22238/12	Change "1C 40 ksi" to "1C of 40 ksi root inch".
22238/25	Delete line.
22239/1	Delete "safety . . . crack".

<u>Page/Line</u>	<u>Correction</u>
22239/2	Change "AF" to "AE".
22239/14	Change "amount E" to "AE".
22240/7	Change "other" to "are".
22241/2	Change "list" to "lift".
22242/21	Change "that" to "factor".
22245/17	Change "AP" to "AE".
22246/1	Change "sub" to "stud".
22247/25	Change "failure" to "Failure".
22248/1	Change "analysis" to "Analysis".
22248/3	Change "models" to "modelers".
22248/7	Change "gather" to "construct".
22248/16	Change "machine" to "machining".
22249/14	Change "pipe" to "by".
22249/15	Insert "of" after "primarily".
22249/23	Change "lilghter" to "lighter".
22250/23	Change "?" to ".".
22252/5	Change "Kiene" to "clean", both times.
22254/7	Insert "under" after "pressures".
22254/11	Insert "or" after "percent".
22254/22	Change "if" to "in".
22254/25	Change "say" to "said".
22256/10	Change "intentions" to "contentions".

<u>Page/Line</u>	<u>Correction</u>
22257/7	Change "four to" to "factory".
22257/8	Insert "Provides pressures" after "recall".
22257/9	Delete "perhaps better loads".
22258/1	Change "time of" to "time. Of".
22259/3	Change "PBME" to "BMEP".
22261/16	Change "?" to ".".
22265/11	Change "begin" to "finish".
22265/12	Change "brake" to "break".
22266/20	Change "please" to "pleased".
22267/21	Change "?" to ".".
22268/8	Change "failure analysis" to "Failure Analysis".
22270/22	Change "?" to ".".
22271/4	Change "die" to "dye".
22272/4	Change "die" to "dye".
22273/3	Change "minimum" to "memorandum".
22274/9	Change "McCarthey" to "McCarthy".
22276/25	Change "TDI" to "Kodiak".
22277/12	Change "die" to "dye".

Wednesday, September 12, 1984

22287/4	Change "S." to "inspection."
22287/15	Change "TD" to "TDI".
22289/8	Change "Association. For" to "Association for".

<u>Page/Line</u>	<u>Correction</u>
22290/1	Delete "Dr. Swanger:" and continue text with question from previous page.
22291/24	Change "number" to "member".
22292/12, 16, 19, 23, 25	Change "TD" to "TDI".
22292/25	Change "engine." to "engine?".
22293/4, 12, 14, 23	Change "TD" to "TDI".
22293/4 *	After "TDI" add "R5 engine."
22293/24	Delete "JUDGE BRENNER: "; change "To" to "to" and treat as a continuation of answer on line 23.
22294/1, 8	Change "negative" to "effective".
22294/14 *	Change "is" to "isn't".
22297/4	Change "reenforcing" to "reinforcing".
22297/14	Insert "the" at beginning of the line.
22301/8, 12, 17	Change "TD" to "TDI".
22302/1 *	Change "TD" to "TDI".
22302/23	Change "to" to "by".
22303/9	Change "TD's" to "TDI's".
222304/1	Correct transcript format so that the statement attributed to Dr. McCarthy begins on a new line.
22304/3	Change "?" to ",."
22304/3	Change "Judge Brenner" to "Mr. Dynner".
22304/4	Delete "Mr. Dynner."
22304/9 *	Insert "on" before the first "the".
22304/13	Change "TD" to "TDI".
22305/8, 9*	Change "next to" to "fifth from".
22307/4	Change ".000" to ".0001".

<u>Page/Line</u>	<u>Correction</u>
22307/16	Change "0001.5" to "0.0015".
22308/16	Change "TD" to "TDI".
22309/24	Change "and" to "in".
22311/12	Change "TD" to "TDI".
22315/17 *	Insert words "of an" after "will,".
22318/14	Change "lacker" to "lacquer".
22320/17	Change "TD" to "TDI".
22321/18	Change "V" to "LDIV".
22321/23	Change "track" to "crack".
22323/9	Delete "done".
22326/16	Change "County" to "Board".
22328/15, 16	Change "Bellevill" to "Belleville".
22328/23	Change "TD" to "TDI".
22330/2	Insert "he" after "experience".
22330/4	Change "a" to "an".
22331/7	Insert ", figure" after "report".
22331/24	Change "if" to "the".
22333/2	Change "symmetry" to "symmetrical".
22333/5	Change "The results" to "From the results".
22333/25	Change "Bellevill" to "Belleville".
22334/7	Insert "that" after "see" and change "on" to "is".
22334/24	Change "die" to "dye".

<u>Page/Line</u>	<u>Correction</u>
22335/18	Insert "criteria" after "initiation".
22335/20	Change "defects" to "cracks".
22335/21	Delete "from".
22336/8	Change "observation" to "operation".
22336/17	Change "be" to "grow".
22336/19, 22	Change "McCarthey" to "McCarthy".
22336/24	Change "TD" to "TDI".
22337/2	Change "remove" to "removed"; change "are" to "required".
22337/7, 9, 17	Change "TD" to "TDI".
22340/12	Change "technical" to "technically".
22341/18	Change "for" to "or"; change "die" to "dye".
22348/18	Begin new paragraph and insert "JUDGE BRENNER:" before "It's".
22348/19	Delete "that" before "overall" and insert "that" before "was".
22349/15	Change "AP" to "AE"; change "for" to "from".
22349/22	Delete "and ."; change "its" to "it's".
22349/23	Change "its" to "it's".
22349/24	Change "pre-experience" to "prior experience".
22350/2	Change "pre-experience" to "prior experience".
22352/1	Delete " " "; change "Information" to "information".

<u>Page/Line</u>	<u>Correction</u>
22353/9	Add "material" after "ferritic".
22353/17	Delete "a need or".
22354/22	Delete "failed".
22355/2	Change "at" to "on".
22357/20	Change "that had" to "it would".
22359/6	Change "successful" to "excessive".
22360/1	Change "fill let" to "fillet".
22362/13	Delete "as long"; insert "long as" after "as".
22363/25	Change "site" to "side".
22367/22	Insert " " " after "much".
22368/10	Change "moderate" to "modern".
22371/19	Insert "that" after "that".
22371/23	Change "Kaymart" to "Kammeyer".
22372/25	Delete "M-i-r-r-l-e-e-es".
22376/2	Change "on" to "in".
22379/3	Change "scrap" to "scrape".
22379/5	Change "scrape per" to "scraper".
22383/5	Change "making" to "marking".
22384/4	Change "of MBI" to "maybe you".
22384/18	Delete "wet".
22392/21	Change "crutch" to "judge".
22393/21	Change "scrap" to "scrape".

<u>Page/Line</u>	<u>Correction</u>
22398/18	Change "site" to "thrust".
22410/21	Change "applied, and" to "applied than".
22413/7	Change "modules" to "modulus".
22413/9	Change "module" to "modulus of".
22416/5	Delete the comma and insert "and" after "calculations".
22420/19	Change "two" to "to".
22421/2	Insert "Judge Brenner:" before "See".
22422/21	Delete "look at".
22422/22	Insert "Mr. Dynner:" before "So".
22422/25*	Change "Dr. Pischinger" to "Mr. Dynner".
22423/13 *	Insert "Dr. Pischinger:" before "One".
22423/16	Change "at" to "as".
22424/16	Delete "as that engine".
22425/17, 20	Change "breaking" to "break-in".
22425/23, 25	Change "t" to "tin".
22426/10, 14 *	Change "thin" to "tin".
22427/2	Change "Judge Brenner" to "Mr. Dynner".
22427/4 *	Begin a new paragraph and insert "Dr. Pischinger:" before "Not".
22427/19	Insert "100 and" after "Between".
22428/10	Change "thin" to "tin".
22428/11	Change "is" to "in".
22428/25	Insert "is" after "this".
22429/20-21	Change "I hope the time we have set for you is over" to "I hope you are over in the time we have set for you."

<u>Page/Line</u>	<u>Correction</u>
22433/9	Insert "and" after "Stone".
22433/18	Change "end" to "in".
22433/19	Delete "of".
22436/4	Change "Kompers" to "Koppers".
22438/9	Change "coat" to "coke".
22438/15	Delete "one hundred CERT".
22439/18	Delete "charge".
22440/4	Change "pressure" to "impression".
22441/1, 11	Change "adherence" to "clearance".
22441/9	Change "coat" to "coke".
22445/13	Change "and" to "in an".
22445/19	Change "plated where" to "plated. Where".
22445/24	Change "wax burning" to "wax, bringing".
22445/25	Change "and" to "with".
22446/19	Change "stroke" to "throwing".
22447/5	Change "principals" to "principles".
22459/25	Delete "roadway".
22461/7	Change "tested by, too," to "testified to".
22463/12	Change "1780" to "1680".
22464/22	Change "to two" to "up to".
22465/2	Insert "in" after "that".
22465/12 *	Change "Dr." to " "Dr. ".
22465/18 *	Change " "You " to "You"
22465/19	Change "mechanisms" to "mechanics".

<u>Page/Line</u>	<u>Correction</u>
22465/24	Delete "ought".
22466/3	Change "boss" to "flaw".
22467/4	Change "Dr. McCarthy" to "Judge Ferguson".
22467/5 *	Change "to" to "you".
22467/22	Change "manufacturer" to "manufactured part".
22468/10	Change "this has" to "they have".
22468/18	Change "die" to "dye".
22468/20	Change "stressed" to "used".
22468/24	Insert "had" after "machine".
22468/24 *	Insert "after" before "the".
22468/25*	Change "running" to "run".
22469/11	Change "at a" to "this is a".
22470/17	Change "SFAR" to "FSAR".
22471/13	Change "have" to "had".
22471/20 *	Change "we've" to "we're".
22472/2	Insert "at" after "run".

Thursday, September 13, 1984

22477/21	Change "Dr. Spence and" to "Dr. Spencer".
22479/15	Change "Judge Brenner" to "Mr. Goddard".
22483/4	Change "Piezo's" to "diesels".
22483/12	Change "lines" to "liner".
22483/19	Change "your" to "our".
22483/20	Change "assess" to "address".
22483/23	Change "A" to "eddy".
22483/23	Change "LP" to "DP".
22485/15	Delete "hence".

<u>Page/Line</u>	<u>Correction</u>
22488/8	Change "AEO" to "Failure".
22488/10	Insert "no" before "flaws".
22490/10	Change "compliment" to "complement" and change "and" to "And".
22495/18	Change "topology" to "topography".
22501/3, 15	Change "sheer" to "shear".
22503/12	Change "milligram" to "mil gap".
22503/19	Change "milligram" to "mil gap".
22503/23	Change "tension" to "tensile".
22504/1	Change "decided to provide you with the record" to "provided you,".
22504/2	Delete the first "of" and change the second "of" to "is".
22504/5	Change "example" to "amplitude".
22505/7	Change "time-bearing" to "time-varying".
22506/20	Insert "your" after "supported".
22509/3	Change "heat stress" to "defects".
22516/18	Change "sheer" to "shear".
22516/21	Change "conforms" to "deforms".
22516/23, 24	Change "strength" to "strain".
22517/4	Change "in" to "on".
22517/7	Change "strength" to "strain" (twice).
22517/9	Change "dimension last" to "dimensionless".
22517/12	Change "dimensions" to "dimensionless".

<u>Page/Line</u>	<u>Correction</u>
22517/25	Change "cif" to "ive".
22517/25	Change "compress cif" to "compressive".
22518/1	Change "strength" to "strain".
22519/9	Delete the comma after "service".
22519/10	Insert a comma after "whole".
22519/16	Change "use" to "misuse".
22521/8	Change "failure analysis" to "Failure Analysis" (twice).
22524/1	Change "Mr. Dynner" to "Judge Brenner".
22524/23	Change "metallurgic" to "metallurgical".
22526/14	Change "Stamford" to "Stanford".
22527/19	Change "closer" to "closely".
22528/4	Change "bond reconditions" to "boundary conditions".
22528/4-5	Change "bond reconditions" to "boundary conditions".
22528/7	Change "bond reconditions" to "boundary conditions".
22528/9	Change "bond reconditions" to "boundary conditions".
22528/12-13	Change "bond reconditions" to "boundary conditions".
22529/24	Change "bond reconditions" to "boundary conditions".
22530/17	Change "hydroelectric" to "Piezo electric".
22531/12	Change "PSA" to "psi".

<u>Page/Line</u>	<u>Correction</u>
22534/11	Change "Mr. Dynner" to "Judge Brenner".
22534/18	Change "Mr. Dynner" to "Judge Brenner".
22535/19	Change "Mr. Dynner" to "Judge Brenner".
22535/22	Change "calling" to "call".
22536/20	Delete "it".
22537/19	Change "break" to "brake".
22539/13	Change "string" to "strain".
22543/10	Delete "in".
22544/4	Change "Randolf" to "Grand Gulf".
22545/19	Change "rerun" to "redirect".
22547/20	Change "mentioned" to "measured".
22550/10	Change "03-300 41-0" to "03-341-0".
22552/10	Change "temperature" to "pressure".
22553/2	Change "engine" to "question".
22555/19	Delete "Judge Brenner" and continue with statement on line 18.
22556/7	Change "Mr. Dynner" to "Judge Brenner".
22557/23	Delete repetition of "tell you".
22561/23	Change "Judge Brenner" to "Mr. Dynner".
22563/18	Change "strength" to "time".
22565/24	Change "strange" to "range".
22568/8	Change "Gardener" to "Goddard".
22569/20	Change "although our findings are" to "when we are through with our findings we'll find you".

<u>Page/Line</u>	<u>Correction</u>
22573/20	Change "catastraphic" to "catastrophic".
22575/11	Change "analagous" to "analogous".
22579/8	Insert ", " after "penetrant".
22580/21	Insert "Mr. Dynner:" before "Now".
22585/21	Change "diesel valves" to "DeLaval".
22585/22	Change "a DeLaval valve" to "DeLaval".
22592/11	Insert "Judge Brenner:" before "If".
22592/14*	Change "a good" to "I will bid".

Monday, September 17, 1984

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22602/15	had	met
22603/4	testing	testimony
22605/6	River	Nuclear
22605/7	Waiting	Wading
22606/9	d'errata	an errata
22607/4	replace contention	contention
22609/4	find	bind
22611/10	practiced my experience	practice and experience
22611/12	Stamford	Stanford
22611/22	MODAL	modal
22614/20	MODAL,MOD	modal
22614/24	Shoreham	shore
22617/7	may not	may
22618/6	modal	generator
22618/15	crankshaft	crankshafts
22619/8	modal	generator
22621/7	vibrator	vibratory
22621/8	MODAL super position	modal superposition
22621/22	modal	generator
22622/23	modal	generator
22628/5	FSAI	FSAR

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22628/7	FSAI	FSAR
22628/8	you design	you say design
22634/1	non-volume	nine volume
22634/4	Shoreham nuclear	Shoreham, nuclear
22635/17	Dynner	Scheidt
22635/25 *	these	this
22636/20	modal	generator
22639/8 *		Begin a new paragraph after "Brenner." and insert before "Questions" in new paragraph "JUDGE BRENNER:"
22640/8	EDG	EDGs
22640/14	B-16	V-16
22640/15	B-16	V-16
22640/17	B-16's	V-16's
22640/18	B-16's	V-16's
22642/9	Johnson	Johnston
22642/19	Johnson	Johnston
22647/20	Johnson	Johnston
22648/11	failure analysis	Failure Analysis
22649/5	JOHNSON	JOHNSTON
22651/25	accumulatively	cumulatively
22656/9	number	number of
22656/14	need	mean
22656/23	of 26789 TDI's	of TDI's
22657/10,12	Hozler	Holzer
22658/12*		Make this a new paragraph and insert "JUDGE BRENNER:" before "I!!!"
22658/25	regardless	regardless of
22660/18	our	no
22661/7	surprises to	surprise as to
22662/1	SHEIDT	JOHNSON
22662/3	Dr. Johnston	Mr. Scheidt
22662/16 *	discourtesy, understand the sides of I understand	discourtesy. I understand
22662/17	both sides of arguments	both sides of the arguments

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22666/7 *		Add "in" after "participated"
22666/15	but reluctantly strike	but we are reluctant to strike
22667/2	have have	have
22668/24	300	3300
22676/2*	stayed	stated
22679/7	real fully	really
22681/12	impirical	empirical

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22683/13	LSD-41	LDS-41
22686/13	contingent	contention
22686/25	this	his
22688/10	crankshaft origin	crankshaft
22687/5,6 *	? (material and attribution missing)	
22688/10	crankshaft origin	crankshaft
22694/1	imprint	in print
22694/8	menus	?
22694/21	measirement	measurement
22698/8	JUDGE BRENNER:Fairbanks	Fairbanks-
22699/7	the;ast	the last
22700/25	might	meet
22710/19	some	sum of
22711/2	views	values
22711/15	Kurt	Kerr
22711/21	overcalculations	older calculations
22712/10	that	then
22715/1	force	forced
22715/7	SCHEITD	SCHEIDT
22715/24	TORWAP	TORVAP
22715/24	TORWAP/R or S.	TORVAP/R or C.
22716/1	denominator	domain
22716/3	TORWAP	TORVAP
22716/10	TORWAP	TORVAP
22716/17	modal	nodal
22716/19	Q. So	So
22716/21	TORWAP	TORVAP
22717/5	TORWAP/R and TORWAP/C	TORVAP/R and TORVAP/C
22717/12	force	forced
22717/15	torsiogra	torsiographed
22717/21	II	2
22717/21	failure analysis	Failure Analysis
22717/24	TORWAP	TORVAP
22718/7	TORWAP	TORVAP
22718/18	MODAL super position	modal superposition
22718/22	motor position	modal superposition
22720/19	MODAL super position	modal superposition
22721/5	TORWAP	TORVAP

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22721/8	TORWAP/R	TORVAP/R
22721/11	TORWAP/C	TORVAP/C
22721/13	TORWAP/R	TORVAP/R
22721/18	MODAL super position	modal superposition
22722/1	MODAL super position	modal superposition
22722/11	MODAL super	modal super-
22722/19	TORWAP/C	TORVAP/C
22722/20	MODAL super positions	modal superposition
22723/2	MODAL super position	modal superposition
22723/6	SCHEIDT	STROUPE
22723/21	MODAL super position	modal superposition
22724/1	measure	measured
22724/2	MODAL super position	modal superposition
22724/8	string gage	strain gauge
22724/11	MODAL super position	modal superposition
22724/15	MODAL super position	modal superposition
22724/16	pre-end	free end
22724/24	MODAL super position-	modal superposition
22725/5	Johnson	Johnston
22725/6	MODAL super position	modal superposition
22725/10	MODAL super position	modal superposition
22725/12	MODAL super position	modal super-
22725/14-16*	(Material appears to be missing and incorrect)	
22725/17	delete "Judge Brenner"	
22725/18	JUDGE BRENNER:	DR. JOHNSTON:
22726/4	MODAL super	modal super-
22726/9	Johnson	Johnston
22726/18	MODAL	modal
22726/19	super position	superposition
22727/1	you	we
22727/11	TORWAP	TORVAP
22727/15	TORWAP	TORVAP
22728/6	TORWAP/R	TORVAP/R
22728/7	TORWAP/C	TORVAP/C
22728/9	Johnson's	Johnston's
22728/10	TORWAP/C	TORVAP/C
22728/19	some	the sum

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22728/23	some	the sum
22728/24	some	the sum
22729/2	TORWAP/C	TORVAP/C
22729/7	TORWAP/R	TORVAP/R
22729/8	TORWAP/C	TORVAP/C
22729/13	TORWAP/C	TORVAP/C
22729/19	MODAL super position	modal superposition
22730/23	MODAL super position	modal superposition
22731/8	TORWAP/R	TORVAP/R
22731/12	MODAL super	modal super-
22731/16	route	root
22731/18	TORWAP/R	TORVAP/R
22731/18	MODAL super position	modal superposition
22731/20	MODAL super position	modal superposition
22731/23	equation	equations
22732/21	TORWAP	TORVAP
22732/24	TORWAP	TORVAP
22732/25	super position	superposition
22733/10*	asked	answered
22733/20	MODAL super position	modal superposition
22735/5	sheer	shear
22735/11	Johnson	Johnston
22735/13	MODAL super position	modal superposition
22736/1	test	first
22736/13	sheer	shear
22736/17	MODAL super	modal super-
22737/14	MODAL super position	modal superposition
22740/14	TORWAP/R	TORVAP/R
22740/22	force	fourth
22741/2	force	fourth
22741/7	would	would not
22742/2	force	fourth
22742/5	force	fourth
22744/9	answered	answer
22744/12	means	meets
22744/17	gree	agree
22744/25	crank shafts	crankshafts

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22745/21	TORWAP/C	TORVAP/C
22745/22	TORWAP/C	TORVAP/C
22745/23	tht	that
22746/15	section	second
22746/20	MODAL super position	modal superposition
22746/22	gage	gauge
22746/23	gage	gauge
22746/24	TORWAP/C	TORVAP/C
22747/10	TORWAP/C	TORVAP/C
22747/14	TORWAP/C	TORVAP/C
22748/8	show.	shown.
22748/17	314	3-14
22749/25	TORWAP/C	TORVAP/C
22750/3	failure analysis	Failure Analysis
22750/3	TORWAP/C	TORVAP/C
22752/10	force	forced
22752/14	3,500 and 50	3,550
22752/16	Johnson	Johnston
22752/20	STROUBE	STROUPE
22753/5	MODAL super position	modal superposition
22753/24	opinion	pin
22754/9	MODAL super position	modal superposition
22754/12	TDI as	TDI's
22754/16	force	forced
22756/12	MODAL super	modal super-
22756/19	crank shaft	crankshaft
22757/13	TORWAP to some	TORVAP to sum
22758/8	315	3-15

Tuesday, September 18, 1984

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22765/20	exception	section
22766/16	Kreitzer	Kritzer
22766/19	Kreitzer	Kritzer
22766/25	Kreitzer	Kritzer
22767/7	Kreitzer	Kritzer
22767/14	operation	operating
22767/17	Kreitzer	Kritzer
22767/22	Kreitzer	Kritzer
22768/5	WEP	web
22768/6	WEP	web
22768/9	Kreitzer	Kritzer
22769/7	Kreitzer	Kritzer
22769/11	if	give
22769/13	site	side
22769/22*	strength	stress
22770/9	vessles	vessels
22770/14	Kreitzer	Kritzer
22770/20	criterium	criteria
22770/23	Kreitzer	Kritzer
22772/1	Kreitzer	Kritzer
22772/7	Kreitzer	Kritzer
22773/11	worldliness	worthiness
22774/1		Delete entire line and replace with "(Board confers)"
22774/4	reaching	reading

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22775/17	Kreitzer	Kritzer
22775/22	criteria	criteria
22776/19	six	four
22782/12	Kreitzer	Kritzer
22782/19	Kreitzer	Kritzer
22782/25	Kreitzer	Kritzer
22783/9	Kreitzer	Kritzer
22783/10	Kreitzer	Kritzer
22783/15	Kreitzer	Kritzer
22788/9	Kreitzer	Kritzer
22791/25	peen	peening
22792/2	peen	peened
22792/5	peen	peening
22793/21	Kreitzer	Kritzer
22794/5	Kreitzer	Kritzer
22794/12	Kreitzer	Kritzer
22797/18	12 by 11	12 by 13
22798/17	Kreitzer	Kritzer
22801/4	some or	the sum of
22805/24	Mass	Maas
22810/13	truson	true sum
22814/14	TSN	Tn
22815/22	314	3-1
22816/1	314	3-14
22818/12	4500	450
22818/24	was	with
22829/14	distracted	?
22831/9	rate of	rated
22831/16	crankshaft connecting	crankshafts, connecting
22831/25	rate of	rated
22832/11	rate of	rated
22832/13	rate of	rated
22833/3-4	rate of	rated
22834/18	know	no
22835/2	assumed	summed
22835/6	assumed	summed

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22839/7	note	node
22844/1	valued	evaluated
22844/14	assumed	summed
22846/5	314	3-14
22849/19	fair analysis	Failure Analysis
22851/2	module	margin
22851/5	modal	model
22854/20	claiming	playing
22860/21	a natural	an actual
22862/5	latitude	magnitude
22862/9	assumed	summed
22862/12	6.93	.693
22863/15	as	and
22862/20	assumed	summed
22866/11	ordering	loading
22867/10	guaged	gauged
22867/11	guaged	gauged
22870/8	C-17 F	C-17
22876/23	a count	account
22884/1	rpm	degrees
22891/1	gage	gauge
22893/2	38	3-8
22893/2	311	3-11
22893/6	bending	bounding
22896/13	addition	edition
22899/5	in in	in my
22907/14	metal improvements	Metal Improvements

Wednesday, September 19, 1984

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22969/12	tests	calculations
22970/5	pounds	psi,
22971/13	holds	holes
22971/16	hold	hole
22971/21	holds	holes
22971/23	calculation	calculations
22972/23	tender	transducers
22973/1	wire	with
22973/10	gage	gauge
22973/13	crankshaft wire?	crankshaft
22974/2	gage	gauge
22974/12	gages	gauges
22974/23	gage	gauge
22975/11	gage	gauge
22975/14	gage	gauge
22975/15	gages	gauges
22975/18	gages on one opinion	gauges on one pin
22976/21	he that might be	that might
22976/24	gage	gauge
22977/1	gage	gauge
22977/6	gage	gauge
22977/10	gage	gauge

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
22977/12	gages	gauges
22977/16	gages	gauges
22979/4	gage	gauge
22979/8	gages	gauges
22980/3	modal	generator
22980/11	modal	generator
22980/15	gages	gauges
22980/17	gages	gauges
22980/17	modal	generator
22980/20	gage	gauge
22980/25	gage	gauge
22981/2	modal	generator
22981/3	gage	gauge
22981/4	gage	gauge
22982/3	317 at page 310	C-17 at page 3-10
22992/5	units	Newtons
22992/15	Montgomery	Goddard
22998/15	dr.	Dr.
22999/4	rate of speed	rated speed
22999/8	7,000 allowables, the rate of	7,000 psi allowable stress at the rated
22999/9	speed is	speed, it is
22999/10	situation--	situation,
22999/18	in maximum	in terms of maximum
22999/19	reading	reading, at rated load.
22999/22	unique, he	unique, it
23002/11	too	two
23004/21	22.7	22.7 percent
23006/8	tortion	torsion
23010/7	contingent	contention
23016/9	modal	harmonic
23016/10	superposition	synthesis
23017/18	rated a	rated at
23017/19	that rate of	that rated
23017/20	printing is	printing there
23017/23	force	fourth

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
23017/24	525	516
23017/25	peaks are 420 and	at 422 rpm at
23018/2	largest one six-and-a-half	larger one is the six-and-a-
	and the	half and some
23018/3	see its quite a ways from	see, these are quite a bit
	the speed we're	away from the rated speed
		we're
23018/7	rate	rated
23018/8	of speed,	speed,
23018/16	the engineering Board	the War Engineering Board
		(1945)
23018/17	brief that in	brief. In
23018/19	Holzer	Holzer and forced
23018/21	is not	was not
23018/22	reason--any degree	reasonable degree
23018/24	and so they	and they
23019/2	a limit	allowable limits
23019/11	usually	using
23019/12	few of them.	very few of them are summed
		up.
23019/13	Sometimes-only	Sometimes, only
23019/14	rate of speed	rates speed
23019/17	code of--	code.
23019/22	methods. Modal superposition	methods; modal superposition
	and using	or harmonic synthesis and
		considering
23019/23	session by session	shaft section by section
23019/23	six	(six)
23019/24	--single order stresses	as single order stresses way
	way did he	below
23019/25	allowables and certainly	allowables. And based
	based	
23020/1	calculation based on the	same calculations, using
	same calculations using	
23020/2	Ts of N, same number	set of Tn,
23020/3	orders and find that 11-inch	and we find that 11-inch
	crank failed and	failed crank

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
23020/10	believe based	believe so based
23020/11	data	data available,
23020/17	consider whether the	consider the
23020/18	generators,	generators loads,
23020/18	rate of speed	rated speed
23020/19	work	range
23020/23	Kaymmer	Kammeyer
23021/9	ratings	rating,
23021/9	rate of	rated
23021/10	speed--rated	speed and rated
23021/10	level 3500	level at 3500
23021/11	modal	generator
23021/14	modal	generator
23021/15	Modal	Generator
23021/22	a 3900	at 3900
23021/24	speed,	load and speed,
23022/1	"dang...	"dangerous"
23028/1	dynamics	dynamic
23028/2	statistical	static
23028/3	dynamics	dynamic
23030/16	obsoletes	?
23031/6	would	would not
23032/16	.05	0.55
23033/2	the	his
23033/3	And I	I
23033/6	.05	0.55
23033/7	think the	think a
23034/7	not--	not discussed,
23034/8	see this that	see that
23034/19	believe the agreement is--	believe
23034/20	the disagreement--the	the
23034/22	somewhat is how	somewhat before, on how
23034/24	been saying the	been using the selected
23035/8	data upgraded	did upgrade the
23035/11	Ts of N	Tn

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
23035/13	believe	believe,
23035/13	my testimony	my earlier testimony
23035/14	Ts of N	Tn
23035/14	Ts of	Tn
23035/15	N. The Lloyd Tx of N	The Lloyd Tn
23035/16	higher than	higher or lower than
23035/16	on the sum	some
23035/16	sum	some
23035/17	orders	Tn of some of the major orders
23035/19	pressure time en	pressure-time diagram on
23035/19	the time gage on the	the
23035/20	this was	this Tn problem was
23035/20	up	up in
23035/22	some--with calculators,	some figuring with a hand calculator,
23035/22	computer,	computer;
23035/23	Ts of N	Tn
23035/24	areas were not--	areas,
23036/1	used Ts of N--	used the
23036/1	Ts of N figures	Tn figures
23036/2	would still	still
23036/3	pounds	psi
23036/5	pounds,	psi,
23038/18	McCarthy	Johnston
23038/20	tenth	ten
23039/3	--any	eddy
23039/11	sensitive	extensive
23039/22	eighths	eighth
23040/4	independence	independent analysis
23040/5	Pischinger	Pischinger,
23040/16	crankshaft	crankshafts
23040/17	a base and based--and	a base and
23040/18	shows	show
23041/2	Dr. McCarthy	Mr. Montgomery
23042/15	review evaluation	revalidation

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
23042/21	evaluation	revalidation
23047/24	Dr. McCarthy	Dr. Johnston
23048/13	Dr. Jonson	Dr. Johnston
23048/18	cutoff	cut off
23049/3	Dr. McCarthy	Dr. Johnston
23050/3	C	C code
23050/4	and there was--	and modes--
23050/5	had	and
23050/9	that we--simulated what	that
23050/12	used is similar but	used. It is similar in concept but
23050/16	Johnson:	Johnston:
23051/9	McCarthy	Johnston
23052/3	overall	over all
23052/16	do	to
23053/4	McCarthy	Johnston
23054/4	Johnson	Johnston
23055/2	to crankshaft	to approve crankshaft
23055/3	the peening and the geometry,	the crankpin geometry, and
23055/4	webs.	webs,
23055/7	pinning	pin
23055/8	web	web sizes
23055/9	is not over--is not	is not
23055/11	that	done
23055/12	built that if they	built. It if
23055/13	require	requires
23055/14	service	office
23055/17	drawing,	drawings and
23055/21	performed and the	performed. The
23055/23	that.	that shaft.
23055/24	control of	control proof of
23056/2	not	not.
23056/3	from foreign countries-- crankshaft	for crankshaft
23056/4	expedient for ABS to have	expedient to have ABS
23056/5	their certification	certification

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
23056/9	is every installation--	is on the installation and
23056/10	installation that ABS	system as a whole. For
23056/11	supplier, the	installation, ABS
23056/12	concerned that they	suppliers
23056/14	limits so this	concerned. They
23056/15	a	limits. So this
23057/12	crank shafts	is
23057/17	DEMA,	crankshafts
23057/18	bit is not	DEMA code,
23057/21	standards, you have to, if	bit before, it is not
23057/25	that this is a guide	standards, if
	reference	that it is a guide or
23059/2	whether they are for--	reference
	for what reason	to determine for whatever
23059/5	so even the--whether	reason
23059/14	the--which	Whether
23059/16	elsewhere,	the owner tracking system
23060/4	overloading	elsewhere, and
23060/6	show all	avoidance of overloading
23061/10	mentioned and all	show that for all
23061/11	experts	mentioned. For all
23061/12	situation so you have to--we	experts we can
23061/13	whether	situation. So we
23061/16	overloading, overfueling	whether;
23061/17	caused by torsionals:	overloading, or overfueling
	so when	primarily caused by
23061/17	combine	torsionals. When
23061/18	all these other factors	combined
		all those other than
23061/21	is not	torsional factors
23061/23	stress,	not
23062/7	normal	stress, which
23062/9	we--if you looked	nominal stress
23062/11	figure and	we looked
23062/12	when	figure.
		When

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
23062/13	be below	be kept below
23062/15	five pounds	5,000 psi
23062/15	7,000 pounds	7,000 psi
23062/24	installation and in	installation. In
23062/25	other--also, how	other case, to specify how
23062/25	overhand	overhang
23063/1	modal	generator
23063/4	Overhead	Overhang
23063/5	modal	generator
23063/6	that you--even though you	though you satisfy
	satisfy torsionals so	torsionals. So
23063/8	and we have based on	process and we have to base
		on
23063/25	a crack	not a crack
23066/13	factor	factory
23070/15	rate of	rated
23071/4	rate of	rated
23071/11	you know	Judge Brenner: you know
23072/4	13	30
23072/15	engineers,	engine,
23073/4	I have seen--we in the	In the
23073/5	crankshaft and	crankshaft by torsionals
23073/8	we--that we used to compare	we, calculated when we
		compared the test data
23073/9	with	data with
23073/9	the torsional	it was a torsional
23073/10	failure is in the shop but	failure in the shop, and we
	we investigated--it was	investigated, and we
		determined it was
23073/11	primarily the failure because	primarily failed because of
	of torsionals in	torsionals, in
23073/13	make the	make that
23073/14	other	only bad
23073/16	by--I	by, those I have
23073/17	but	are due to

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
23074/20	of Ts of N come up	the subject Tn comes up,
23074/22	Ts of N	Tn
23074/22	approximate--	some approximates.
23074/23	and based on that approximate	Based on that estimation
23075/1	Ts of N	Tn
23078/6	calculations, you can--if	calculations, if
23078/7	case, and also	case. And also,
23078/8	you were	you
23078/9	treated--if you would	would
23078/10	thing, if you	thing, and if you
23078/11	gage	gauge
23078/14	24 orders	24 orders,
23078/14	psi	psi limit
23078/21	Ts of N	Tn
23079/7	building	built
23079/8	pounds	psi
23079/8	pounds	psi
23079/9	pounds	psi single order limit,
23079/10	quite	they are all quite
23079/10	pounds	psi
23079/10	7,000 pounds	7,000 psi limit
23079/11	that	that it
23079/12	DEMA	DEMA,
23079/12	pounds	psi limit
23079/14	orders	orders,
23079/14	safe and we	safe. We
23079/17	9,000 pounds, four orders.	9,000 psi, using four orders sum.
23079/21	this, they will be--	this,
23079/23	because 9,000 pounds,	because even with 9,000 psi
23079/24	pounds	psi
23080/6	using	use
23080/22	gage	gauge
23081/1	that this	like that and this
23081/14	fairly	very
23082/2	some	some test

<u>Page/Line</u>	<u>Reads</u>	<u>Should Read</u>
23082/5	on DEMA exceeded limits.	On 13 x 11 exceeded DEMA limits.
23082/6	that, and my--and the improvement,	that, calculation on 13 x 12 is under the DEMA limits and there is improvement.
23082/7	real	ultimate
23082/7	crankshaft,	crankshaft
23082/8	from the 12 inch toll inches there's	The design is changed from 11 to 12 inch, there's
23082/9	the strength in	the material strength
23082/10	the strength because	the stress level because
23088/15	I understand	Judge Brenner: I understand
23091/12	cylinder	combined