

RELATED CORRESPONDENCE  
UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

8/22/83

DOCKETED  
USNRC

Before the Atomic Safety and Licensing Board

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OFFICE OF SECRETARY  
NUCLEAR REGULATORY COMMISSION

In the Matter of )

LONG ISLAND LIGHTING COMPANY )

(Shoreham Nuclear Power Station, )  
Unit 1) )

Docket No. 50-322 O.L.

SUFFOLK COUNTY'S ANSWER AND OPPOSITION  
TO LILCO'S MOTION FOR A PROTECTIVE ORDER

On August 17, 1983, LILCO filed a Motion for a Protective Order in Response to Suffolk County's Renewal of its Motion to Compel discovery of certain documents relevant to the County's contention regarding the cracking of cylinder heads in the Shoreham emergency diesel generators. Those documents are described in Attachment A to the County's Renewal of Motion to Compel Discovery, dated August 12, 1983, and have been sought by the County since early July. In its Motion LILCO agrees to provide some documents to the County, and asks for a protective order with respect to items 2, 3 and 5<sup>1/</sup> of the County's Attachment A. LILCO Motion at 11. Suffolk County opposes LILCO's request for a protective order, and asserts that LILCO's responses to items 1 and 4 of the County's Attachment A do not satisfy the County's discovery requests.

<sup>1/</sup> Item 5, the Transamerica Delaval, Inc. ("Delaval") written procedure for liquid penetrant testing, was requested during the deposition of Mr. Pratt of Delaval on August 2, 1983. LILCO states that its failure to produce this procedure previously was an "oversight" and now agrees to produce it. See LILCO Motion at 6. Therefore, the County does not understand why LILCO is seeking a protective order as to item 5.

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Part A of LILCO's Motion consists largely of a strained argument that documents relating to Delaval quality assurance program applicable to the production of cylinder heads (items 1, 2 and 3) are beyond the scope of the County's contention. Suffolk County's Renewal of Motion to Compel Discovery clearly demonstrates that these documents are within the scope of and relevant to the contention. The points made in the County's Motion will not be repeated here, but some of LILCO's arguments should not go unanswered.

First, LILCO incorrectly states that quoted portions of the Board's Memorandum and Order of June 22, 1983 (LBP-83-30) show that the Board "recognized that a general contention concerning quality assurance matters at Delaval was inappropriate at this stage of the proceeding." LILCO Motion at 2-3 (emphasis added). In fact, as LILCO well knows and as the text of the Board's Memorandum and Order (at 17 and 24) makes crystal clear, the Board's remarks were addressed to statements regarding LILCO's quality assurance program and not that of Delaval.

Second, while conceding that Delaval's QA program is relevant to the issue of the reliability of the Delaval cylinder heads, LILCO argues that the County should be entitled only to documents relating to certain Delaval "inspection techniques on which LILCO and Delaval rely in establishing that there is reasonable assurance that the new cylinder heads will not leak . . . ." LILCO Motion at 5-6. This novel interpretation of the Commission's discovery regulations must be rejected. The

test is not whether documents are relevant to the arguments LILCO relies upon to dispute the County's contention, but rather whether they are relevant to the contention itself. The QA program at Delaval is directly at issue in the County's contention. See County Motion at 2-5.

Moreover, LILCO's attempt to artificially narrow the relevance of Delaval's QA program displays a fundamental misunderstanding of 10 C.F.R. Part 50, Appendix B requirements. While LILCO apparently believes that the mere existence of Delaval inspection procedures ensures that cylinder heads will not leak, Appendix B makes it clear that other factors are equally important. For example, do QA personnel performing the tests have sufficient authority and organizational freedom, and are their duties clearly established and in writing (Criterion I)? Are QA personnel performing the inspections adequately trained and indoctrinated (Criterion II)? Are there adequate written design specifications, drawings, procedures and instructions for the cylinder heads and changes thereto to assure that the QA standards are properly applied (Criterion III)? This list of examples could continue, but the foregoing are sufficient to illustrate the error of LILCO's position,<sup>2/</sup> and that the documents sought by the County are manifestly relevant.

The following are comments on LILCO's response to each item (except item 5) in Attachment A to the County's Motion.

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<sup>2/</sup> I&E Report 83-25 discloses possibly significant deficiencies in the "new-style" Delaval cylinder heads delivered to LILCO, and demonstrates that Delaval has in fact not met Appendix B requirements.

Item 1

The documents LILCO agrees to produce appear to be incomplete. LILCO has not included I.P. 500, as requested, and does not assert that the proffered documents are fully responsive to the County's request. The LILCO response will be acceptable only if LILCO represents that the documents listed in the LILCO Motion at 6 constitute all of the "documents comprising the Delaval Quality Assurance program in effect at the time the 'new-style' cylinder heads for LILCO were manufactured and which were applicable to the production of such cylinder heads . . . ."

Item 2

These documents are clearly relevant for the reasons discussed in the County's Motion. LILCO's assertion that it would be "unnecessarily burdensome" for Delaval to find these QA documents is puzzling. 10 C.F.R. Part 50, Appendix B requires Delaval to keep these records in a proper and assessable place. See also ANSI 45.2, para. 18. LILCO also argues that the requested documents should not be produced because of other "extensive discovery." Actually, these documents were first requested on or about July 13-14, and have since been actively sought. There are no other documents and the County has received no information which duplicates the requested QA documents.

Item 3

LILCO has repeatedly refused to identify or produce all LILCO inspections and audits of the Delaval manufacturing

process for the cylinder heads, although such documents are obviously relevant to the County's contention. These documents were first requested in the initial July 8 County discovery request, which yielded only a single LILCO field audit of certain Delaval procedures and techniques and a statement that there are no other LILCO audits which deal "explicitly" with cylinder heads. Subsequently, the County learned from the NRC Staff of the existence of the three LILCO audits and reaudits of Delaval's QA program specifically referred to in this item. The documents requested are clearly relevant and as specific as the County can be, given that it does not know whether additional LILCO audits/inspections exist. The three specific audits were cited by the ECI report to the NRC Staff as showing a "weakly implemented" QA program at Delaval, a conclusion of significant relevance to the County's contention. See also County Motion at 5.

Item 4

LILCO's response to this item is evasive and confusing. The County's request is for "documents showing gating, risers and chills for the 'old-style' cylinder head molds and for the 'new-style' head molds." (Emphasis added). We believe the County and the Board are entitled to a clear statement from LILCO as to whether or not any such documents exist. Instead, LILCO merely asserts that there are no drawings showing gating, risers and chills. LILCO refers to a list of changes given to

the County, which is merely a summary; that summary list (attached as Exhibit 1 hereto) does not actually show or describe gating, risers and chills. LILCO argues that Delaval personnel told the County about the molds. This is obviously not a substitute for the requested documents; indeed, such documents may be the only available way to determine the accuracy of the information supplied by Delaval personnel orally. Finally, LILCO asserts that the County should not be entitled to the requested documents (if any exist) because of an alleged failure to pursue discovery. This assertion is false. The County first requested these documents in its initial July 8 discovery request, and vigorously pursued the matter, including during the deposition of Mr. Pratt.<sup>3/</sup> LILCO's unreasonable and obdurate refusal to identify and produce these documents is not a valid reason to reward LILCO with a protective order. These documents are clearly relevant, as they would show changes alleged by LILCO to be casting improvements which make the new cylinder heads unlikely to leak.

Item 6

Suffolk County acknowledges LILCO's representation that all documents requested have been or will be supplied. We

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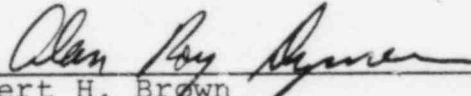
<sup>3/</sup> The relevant pages of Mr. Pratt's desposition are attached as Exhibit 2 hereto. We find it strange that in opposing this item, LILCO attached to its Motion extensive and partially irrelevant excerpts from the deposition of Messrs. Dobrec and Helgerson of Delaval, but neglected even to mention Mr. Pratt's deposition, during which these documents were expressly and specifically requested by the County.

note that both the County and Mr. Pratt referred to "warranty orders" rather than "warranty claims," and unless LILCO otherwise informs us, we assume the two terms are synonymous.

For the reasons set forth above, LILCO's Motion for a Protective Order should be denied in its entirety, and the County's Renewal of Motion to Compel Discovery should be granted.

Respectfully submitted,

David J. Gilmartin  
Patricia A. Dempsey  
Suffolk County Department of Law  
Veterans Memorial Highway  
Hauppauge, New York 11788



Herbert H. Brown  
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Washington, D.C. 20036

Attorneys for Suffolk County

August 22, 1983



4 Valve Steel Head - 03-360-03-OF

The extent of the foundry procedures that have been changed over the years to improve the castability, processing and ultimate quality of the 4 valve steel heads are listed chronologically as follows:

1. Edge of mold opposite pouring cup raised 4" to allow the horizontal flat surfaces of mold cavity to fill uniformly "up-hill" thereby eliminating internal laps and misruns. Started 3/1/76.
2. Cross sectional area of runner and gates increased 50% to allow the metal to enter the risers and mold cavity faster. This alteration, eliminated the possibility of a riser not properly feeding the casting due to cold metal caused by slow pouring. Especially important on the top risers. Casting series I68 cast 7/1/76.
3. A 6" upset was permanently added to the flask cope to increase the height of the 3 top risers creating a larger reservoir of hot feed metal. Also better hot tear and metal inclusion control was obtained by changing the ladle deoxidation practice from aluminum - Manganese to Hypercal. Series J90 cast 10/26/76.
4. Metal specification changed from Delaval's No. 1 to No. 7 which is a lower carbon, higher manganese composition. The higher manganese along with the Hypercal deoxidation practice minimized the deleterious effects of sulphur.
5. Center riser sleeve cope side changed from an insulating to an exothermic composition. Exothermic reaction of material when ignited induces heat to molten metal thereby delaying solidification of riser and subsequently improving the feeding characteristics. Series J94 cast 11/3/76.
6. Oil sand core pouring cups replaced with purchased ceramic pouring cups to eliminate washing action during pouring. This change eliminates another possibility of sand being carried into mold cavity during pouring. Series K18 cast 12/3/76.
7. Fourth riser pad added to center riser to feed an isolated area on cope surface. Gas and/or shrinkage was sporadically encountered at area in question. Series K26 cast 12/9/76.
8. Three brackets at fillet of throat section of cope side intake core were removed and replaced with a contoured chill. Chill eliminated cracking or hot tear in fillet. Series K69 cast 1/21/77.
9. To eliminate a hot tear at intake section of casting between the valve ports, a chill was placed at fillet. Series A5 cast 2/11/77.
10. Molding sand was changed from dry sand to sodium silicate ester sand. Oven drying of cope and drag sections was eliminated. Better surface finish of mold cavity was obtained with a minimal possibility of loose sand entering the casting during pouring. Series A25 cast 2/23/77.



11. Height of two blind risers at exhaust flange increase 1 1/4" to increase feed metal of blind risers. Shrinkage previously encountered at flange was eliminated after chills were placed in the No. 8 1/2 oil sand exhaust core. Series A32 cast 3/7/77.
12. To minimize the occasional shrinkage encountered in the fuel injector bore after machining, the length of the 1" dia. chill rod was increased from 6" to 7 1/2". Series B29 cast 4/13/77.
13. The two rectangular clean-out windows in the combustion face were cast solid, thereby eliminating the necessity to weld fill-in plates and subsequently encountering weld porosity. The two outside or "wing chills" on combustion face near exhaust port removed to eliminate hot tears that consistently developed between the chills. Push rod cavity core sand changed from No. 2 oil sand to CO<sub>2</sub> which reduced veining hot tears to a minimum in the casting. B48<sup>2</sup> cast 4/21/77.
14. Sides of two of the three 2" thick chills on combustion surface were beveled to reduce severity of solidification and subsequent hot tears between valve ports. Series B60 cast 4/27/77.
15. No. 2 oil sand replaced with CO<sub>2</sub> sand for intake cores. Chromite sand fillets discontinued but fillet<sup>2</sup> chills retained. Series B96 cast 5/18/77.
16. Drag portion of upper water jacket core made of CO<sub>2</sub> sand replacing No. 2 oil sand. This change eliminated extensive hot tears at internal fillets. Series C13 cast 5/26/77.
17. Chill placed on combustion face between hold down bolt cores at intake end. Extensive hot tears and/or internal shrinkage was encountered on MPI Series C56 cast 6/27/77.
18. Center riser moved 2" to exhaust end of pattern, thereby centering riser over fuel nozzle section 9/22/77.
19. Core boxes of jacket cores altered to produce a cone effect in fuel nozzle section of casting. Shrinkage was eliminated due to directional solidification towards the center riser - 10/17/77.
20. A tile 2" I.D. X 3" long was placed at the bottom of the down sprue to eliminate loose sand from washing into mold. Volume of pouring metal remains constant due to choke - 10/20/77.
21. Side risers padded towards center chill and padding increased 3/4" to promote directional solidification from fuel injection area of combustion surface to riser contacts - 10/21/77.
22. Flat topped blind side risers altered to hemispherical topped with "firecracker" core - 10/31/77 - Wallace
23. Chills placed between exhaust valve ports and at air start hole on combustion face - 3/10/78.

24. All Sodium Silicate CO<sub>2</sub> cores were oven dried immediately prior to use - 3/10/78.
25. Padding added to drag pattern between hold down bolt cores at intake end to eliminate hot tear problem - 4/20/78.
26. Diameter of both blind risers at exhaust end increased from 5" to 6" and contact area doubled. Gating to risers eliminated. Changes eliminated shrinkage at exhaust flange face - 4/20/78.
27. Runner height to side risers increased 1/2" to reduce metal velocity during pouring - 4/20/78.
28. Mold poured flat. Previously mold was tipped with exhaust end 4" lower than intake end - 4/25/78.
29. Exhaust core sand mix changed from No. 8-1/2 oil sand to Sodium Silicate CO<sub>2</sub> mix - 5/18/78.
30. Chill removed between exhaust valve ports to eliminate surface edge cracking - 6/7/78.
31. To eliminate shrinkage in bosses at gas flange, the blind riser contact was increased to 3" x 3" and riser was hemispherically topped - 7/6/78.
32. The thin wall between gas and air start passage was eliminated by increasing the height and reducing the diameter of the core prints in the cope to stabilize the cores during pouring - 8/22/78.
33. Shrinkage in exhaust valve guides was eliminated by adding a 2-1/2" round x 1" thick chill to the exhaust core prints - 10/27/78.
34. Hot tearing between hold down bolt holes at edge of register was eliminated by using a double end tapered chill at the air start hole - 10/27/78.
35. Shrinkage at gas flange internal cavity was eliminated when a chill was added to cope surface adjacent to core print - 12/28/78.
36. Began using risertherm on center riser - 1/12/79.
37. Center riser volume was increased for better feeding when the 6" exothermic sleeves were replaced with a 9" diameter insulating cone topped with an 8" dia. exothermic sleeve - 2/8/79.
38. Sand burn - in and scabbing which is a chronic problem was eliminated in the fuel gas passage when the oil sand core was replaced with a shell core - 5/16/79.

39. Started to S.R. heads after final water test - 8/79.
40. Intermediate deck increased from 1/2" to 5/8" to strengthen 3 o'clock and 9 o'clock on firedeck, and started use of 1 piece side plates - 8/30/79.
41. Started exhaust cores in shell sand vs. CO<sub>2</sub> sand - 10/25/79.
42. Started casting three tooling buttons on drag face - 1/28/80.
43. Started using air-start core in shell sand - 4/11/80.
44. 1st sample using new pattern equipment series A-1. <sup>HEAT 581-F</sup> This also includes shell intake, shell push rod cavity - 8/8/80.
45. 2nd sample cast - 8/18/80.
46. Production started using new equipment - 9/11/80.
47. Started gating into side risers only - 6/3/81.
48. Changed water jacket cones from CO<sub>2</sub> sand to pepset - 9/1/81.
49. D 53 - 509 H - 10/21/81 - Started 8" round side blind risers.
50. D 57 - 534 H - 10/26/81 - started 2-1/2" and 5-1/2" clean out opening cope side.
51. D 64 - 541 H - 10/27/81 - started chills at parting line intake end.
52. D 96 - 608 H - 11/7/81 - started making pancake core of our No. 2 sand to replace pepset sand. Large Tex-Vent used on possible core.  
~~POSSIBLE~~  
PANCAKE
53. E 17 - 651 H - 11/13/81 - started new design pancake core with 4th print under gas flange.
54. E 25 - 664 H - 11/17/81 - started bottom cross gate to 8" round blind riser.
55. E 32 - 682 H - 11/19/81 - started spray wash on mold 24 hours after making mold and cured on floor.
56. E 46 - 767 H - 12/8/81 - started cracking brackets in water jacket core around hold down posts.
57. E 43 - 759 H - 12/7/81 - started using core alignment fixture prior to closeup.
58. E 58 - 811 H - 12/16/81 - started upper water jacket boss for gage hole.
59. E 85 - 869 H - 12/31/81 - started using exhaust shell cores with 1/2 Zircon plus 1/2 Silica shell sand.
60. E 91 - 875 H - 1/4/82 - Jim Easterling returned to work. Brackets (cracking) placed in lower water jacket core.

61. G 10 - 132 J - 2/19/82 - 2 - 3-1/2 square x 6" high blind riser at intake end center boxes at parting line.
62. G 22 - 189 J - 3/2/83 - start solid boss from center of intake end push rod cavity to cope. Add 1-1/4" and padding on top riser intake end.
63. G 66 - 342 J - 3/26/82 - replaced 8" Rd x 15-1/2" high x 5" neck down center riser exo sleeve with 10" Rd x 15-1/2" high x 6" neck down center riser exo sleeve (Insul).
64. H 67 - 533 J - 5/12/82 - started upper water jacket cores made Zircon sand. Pepset.
65. H 94 - 704 J - 8/11/82 - started lower jacket core (pancake) shell sand.
66. - 11/1/82 - started leaving off either one or the other "D" side plates.
67. J 12 - 944 J - 1/17/83 - removed gage hole boss from fuel injector.
68. J 16 - 961 J - 1/24/83 - started No. 3 APC shell in 4" x 6" riser bob over gas passage.

1 UNITED STATES OF AMERICA  
2 NUCLEAR REGULATORY COMMISSION EXHIBIT 2  
3 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD  
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6  
7 In the Matter of

8 LONG ISLAND LIGHTING COMPANY  
9 (SHOREHAM NUCLEAR POWER STATION,  
UNIT 1.)

No. 50-322 O.C.

10 Deposition of  
11 RICHARD A. PRATT

12 August 2, 1983

13 VOLUME I

14 Pages 1 - 157  
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26 Reported by ADELE I. NOLAN, CSR No. 1641,  
27 LESLIE TANIMURA-WONG, CSR No. 5796  
28

BE IT REMEMBERED that, pursuant to Notice of Taking Deposition and on Tuesday, the 2nd day of August, 1983, commencing at the hour of 9:30 a.m. thereof, at the offices of TRANSAMERICA DELAVAL, INC., ENGINE AND COMPRESSOR DIVISION, 550 85th Avenue, P. O. Box 2161, Oakland, CA 94621, before me, ADELE I. NOLAN, a Notary Public in and for the City and County of San Francisco, State of California, there personally appeared

RICHARD A. PRATT,

called as a witness by Suffolk County, who, being by me first duly sworn, was thereupon examined and testified as hereinafter set forth.

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KIRKPATRICK, LOCKHART, HILL, CHRISTOPHER & PHILLIPS, 1900 M Street, N. W., Washington, D. C. 20036, represented by ALAN ROY DYNNER, Attorney at Law, and MICHAEL S. MILLER, Attorney at Law, appeared as counsel on behalf of Suffolk County.

HUNTON & WILLIAMS, 707 East Main Street, Richmond, Virginia 23212, represented by T. S. ELLIS, III, Attorney at Law, and ANTHONY F. EARLEY, Attorney at Law, appeared as counsel on behalf of Long Island Lighting Company.

ORRICK, HERRINGTON & SUTCLIFFE, A Professional Corporation, 600 Montgomery Street, San Francisco, California 94111, represented by DAVID W. ALDEN, Attorney at Law, and VICTORIA GRUVER, Attorney at Law, appeared as counsel on behalf of Transamerica Delaval, Inc.

Also present: Marc W. Goldsmith, President, Energy Research Group, Inc., 400-1 Totten Pond Road, Waltham,

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3  
1 Massachusetts 02154; William B. Avery, P.E., Metallurgical  
2 Consultant, 640 West Iowa Avenue, Sunnyvale, California 94086;  
3 John C. Kammeyer, Assistant Head, Site Engineering Office,  
4 Stone & Webster Engineering Corporation, Shoreham Nuclear Power  
5 Plant, Wading River, New York.

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8 MR. DYNNER: On the record, please.

9 For the record, this is a deposition of Richard Pratt,  
10 which is taken in the proceeding before the Atomic Safety  
11 And Licensing Board in the matter of Long Island Lighting  
12 Company, Shoreham Nuclear Power Station, Unit 1.

13 The reporter has a list of those present in the room.

14 Mr. Pratt, before you are sworn in -- let's go ahead  
15 and swear the witness.

16 [Witness sworn.]

17 ---o0o---

18 EXAMINATION BY MR. DYNNER

19 MR. DYNNER: Q. Mr. Pratt, for the record, would you give  
20 your name and your home address, please?

21 A. My name is Richard A. Pratt, and my address is  
22 Transamerica Delaval, Incorporated, 550 85th Avenue, Oakland,  
23 California.

24 Q. And, Mr. Pratt, you are employed by Transamerica  
25 Delaval, aren't you?

26 A. That is correct.

27 Q. Would you give the capacity in which you are employed?

28 A. As the Manager of Customer Service.

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1 ample assurance that casting imperfections that may have  
2 previously existed will not occur in the current model cylinder  
3 head produced by Delaval?

4 A. I believe so. In the limited knowledge that I have of  
5 the foundry and casting techniques, gating is the means of  
6 feeding a molten metal into the mold, and it is a critical part  
7 of assuring that the mold is fed in the proper manner and,  
8 therefore, the metal in the mold is sound when it freezes.

9 Q. Do you know -- if you don't know what the specific  
10 changes were made in the gating, do you know when the changes  
11 were made in the gating?

12 A. The most recent change I'm familiar with is the  
13 September of 1980, but I'm not sure whether there have been  
14 changes since then.

15 Q. Does your company maintain documentation specifically  
16 showing the changes that were made in the gating?

17 A. I do not know.

18 Q. Would you please try to ascertain that for me, and  
19 if such documents exist, let me know, and we will request that  
20 copies be furnished to the County.

21 A. What was it? Be specific.

22 Q. Of the documentation for the old gating and the new  
23 gating.

24 MR. ELLIS: I have that. I think the changes, Mr.  
25 Dynner, were among the documents already supplied to the County  
26 in their initial visit.

27 MR. DYNNER: Q. Now, Mr. Pratt, I think the third item  
28 that you mentioned referred to the risers; is that correct?

1 A. Yes.

2 MR. ELLIS: I'm not sure whether that was the third --  
3 why don't you just change your list the way you have it, Mr.  
4 Dynner, and ask him about each one rather than ask him to  
5 confirm whether that was the third or the fourth or the fifth  
6 that you mentioned.

7 MR. DYNNER: I know what he said.

8 Q. Now, Mr. Pratt, specifically, what was done to  
9 improve or change the risers?

10 A. Again, that is a matter of general discussions I have  
11 had with our foundry people and our metallurgical consultant,  
12 and I cannot say precisely what the changes to the rising on  
13 the pattern have been.

14 Q. How do you understand the changes that were made to  
15 the risers?

16 Do you understand the question?

17 What is your understanding of the changes that you have  
18 made?

19 A. Yes. I understand the question. I don't believe I  
20 can answer it.

21 I don't have sufficient knowledge to answer that question.

22 Q. Do you have any understanding of the changes that  
23 were made to the risers?

24 A. No.

25 Q. Do you wish, therefore, to withdraw your testimony that  
26 the changes to the risers gave additional assurance that casting  
27 imperfections that might have previously existed will not exist  
28 in the future?

1 A. No, I don't.

2 Q. Well, what do you base that statement on, then?

3 A. I rely on the integrity of the people that I have  
4 conversed with in our foundry and in our metallurgical  
5 consultants when they tell me that there have been changes made  
6 to the risering that have improved the quality of the heads. I  
7 take their word for it.

8 Q. Okay. Are you relying in the same way with regard to  
9 the statement you made about the gating?

10 A. Yes.

11 Q. And are you relying in the same way with regard to  
12 the statement that you made about the improvements or changes  
13 in chills?

14 A. Yes.

15 Q. Could you tell me specifically whose information you  
16 were relying upon in your organization for those three items?

17 A. I'm relying on conversations I have had with our  
18 foundry manager, Mr. Dobrec, and our foundry metallurgist, Mr.  
19 Helgerson, and our foundry consultant, Professor Wallace

20 Q. Has any of those gentlemen or anyone else in your  
21 organization ever produced anything in writing with regard to  
22 the changes and the alleged improvements from those three items;  
23 that is to say, the gating, the risers, and the chills?

24 MR. ELLIS: Object to the question. In large measure,  
25 it has been asked and answered, and I think I indicated to you  
26 we produced documents relating to that at the first visit, but  
27 I will permit the witness to answer.

28 MR. DYNNER: Mr. Ellis, I am perfectly justified in asking

1 the witness about documents rather than relying upon informal  
2 conversations from persons who may not have been in the Delaval  
3 organization and familiar with these two gentlemen, and the  
4 documents that they have produced.

5 Q. Can you answer the question, Mr. Pratt?

6 A. Could you repeat it, please?

7 Q. The question is whether any of those three gentlemen  
8 or anyone else in the Delaval organization have, to your  
9 knowledge, produced anything in writing with regard to the changes  
10 and alleged improvements made in the gating, rising, and/or  
11 chills?

12 MR. ELLIS: Object to the question as excessively broad  
13 and vague. Conceivably, every time that a new document or a  
14 document on any new head is produced, whether it's a sales  
15 document or anything else, it relates to changes and  
16 improvements.

17 Can you be more specific?

18 MR. DYNNER: Q. Do you know of any such reports?

19 A. Yes. I believe there are several summary reports  
20 written by Professor Wallace as a result of his trips here  
21 and his consulting services as to the revisions and changes made  
22 to improve the head castings.

23 MR. DYNNER: We would request production of copies of  
24 those documents as early as possible, please.

25 Q. Mr. Pratt, do you know when the changes that we have  
26 been talking about with the risers occurred?

27 MR. ELLIS: Excuse me?

28 THE WITNESS: I believe I answered that previously, but to

1 they all occur in September of '80, and you then added changes  
2 in casting sand.

3 A. All right. I'm sorry I misinterpreted your question.

4 I thought you -- I did not realize you were specifically  
5 speaking about changes incorporated in September of '80.

6 I do not believe that there was a specific change to the  
7 casting sands on that date -- that is not to preclude the  
8 possibility that there were changes made to the casting sands  
9 after that date.

10 Q. Let's try this, Mr. Pratt.

11 You have your statement in your affidavit on page 4 right  
12 in front of you, don't you?

13 A. Yes, I do.

14 Q. And you see where you refer to casting techniques?

15 A. [Examining document.] Yes.

16 Q. Are the changes that were made in the casting sands  
17 part of the casting techniques that you were referring to in  
18 that statement in your affidavit?

19 A. No, they were not.

20 Q. I think I already asked you about the documentation  
21 for the gating, the riser changes, and I want to add to that  
22 request, documentation that exists with respect to the changes  
23 made in chills.

24 When I refer to that documentation, for your information,  
25 Mr. Pratt, I am referring to all of the documentation pertaining  
26 to those items which Delaval considers to be required by  
27 Appendix B.

28 A. That's understood.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

DOCKETED

'83 AUG 23 A11:25

In the Matter of )

LONG ISLAND LIGHTING COMPANY )

(Shoreham Nuclear Power Station,  
Unit 1) )

OFFICE OF SECRETARY  
DOCKETING & SERVICE

Docket No. 50-322 (O.L.)

CERTIFICATE OF SERVICE

I hereby certify that copies of SUFFOLK COUNTY'S ANSWER AND OPPOSITION TO LILCO'S MOTION FOR A PROTECTIVE ORDER, and SUFFOLK COUNTY'S NOTICE OF POTENTIAL MOTION TO ADMIT NEW CONTENTION ON DIESEL GENERATORS, dated August 22, 1983, have been served to the following this 22nd day of August, 1983 by U.S. mail, first class, except as otherwise noted.

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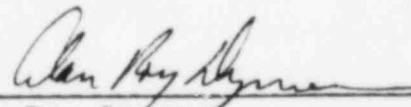
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DATE: August 22, 1983

(\*) By Hand  
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