UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Appeal Board

In the Matter of LONG ISLAND LIGHTING COMPANY (Shoreham Nuclear Power Station, Unit 1)	)	Docket No. 50-322-OL

SUFFOLK COUNTY AND STATE OF NEW YORK BRIEF IN SUPPORT OF APPEAL OF JUNE 14, 1985, ASLB DECISION

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July 17, 1985

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I. INTRODUCTION

Pursuant to 10 CFR §2.762, this Brief is submitted in support of the appeal by Suffolk County and the State of New York of the Partial Initial Decision issued by the Atomic Safety and Licensing Board on June 14, 1985 (LBP-85-18). That decision held that the three emergency diesel generators ("EDGs"), which LILCO proposes to use to supply backup emergency electrical power to safely shut down the Shoreham plant in the event of a loss of off-site power, satisfied the requirements of General Design Criterion 17, 10 CFR Part 50, Appendix A ("GDC 17"). The decision should be reversed because the Licensing Board erroneously excluded evidence showing that GDC 17 has been consistently interpreted and applied to require that, unlike in the case of the EDGs at Shoreham, the maximum load at which

EDGs are permitted to operate ("Maximum Permitted Load") must be substantially higher than the EDGs' maximum emergency service loads ("MESL").1/ Contrary to GDC 17 requirements, the Licensing Board found the EDGs at Shoreham qualified, although their Maximum Permitted Load is 3300kW2/ and their highest MESL is 3253.3kW.

II. PROCEDURAL BACKGROUND

On May 2, 1983, Suffolk County filed a motion to admit a new contention alleging, among other things, that the EDGs did not comply with the requirements of GDC 17 because of cracking of cylinder heads and excessive vibration. The Licensing Board granted the County's motion in part (LBP-83-30, 17 NRC 1132 (1983)), and scheduled hearings on the EDG contention. In August 1983, however, shortly before those hearings were scheduled to begin, the original crankshaft on one of the EDGs severed during testing and additional cracks were discovered in the crankshafts of the other two EDGs. The hearings were

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1/ The MESL is the maximum electrical load existing on an EDG during a design basis event. The design basis event at Shoreham is a loss of off-site power coincident with a loss of cooling accident. (Decision at 90.)

2/ The Licensing Board would allow a total of 2 hours of operation during the first fuel cycle at loads between 3300kW and 3400kW. (Decision at 82-83).

postponed and lengthy technical reviews of the EDGs were conducted. Numerous defects in other EDG components, particularly the cylinder blocks, were discovered. (Decision at 1-2.)

Based in part upon these numerous defects in the EDGs, the County moved to admit a supplemental EDG contention on January 27, 1984. In oral rulings on February 22 and July 5, 1984, as confirmed by written order dated July 17, 1984, the Licensing Board granted the County's motion in part. As admitted by the Board, the supplemental EDG contention alleged that, contrary to the requirements of GDC 17, the EDGs would not operate reliably or adequately perform their required functions because the EDGs were over-rated and undersized, and certain EDG components, including the crankshafts and the cylinder blocks, were inadequately designed or not satisfactorily manufactured.

Hearings on the supplemental EDG contention began on September 10, 1984. On November 6, 1984, however, shortly before the close of the record, LILCO moved to reopen and supplement the record. In connection with its motion, LILCO sought to amend the Shoreham FSAR by reducing the Maximum Permitted Load ratings for the EDGs from their original continuous duty rating of 3500kW and short-time rating of 3900kW[3/] to the

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3/ Section 3.7 of the Institute for Electrical and Electronics Engineers, Inc. ("IEEE") Standard 387-1977 defines

(Footnote cont'd next page)

so-called "qualified load"4/, a Maximum Permitted Load of 3300kW. By unpublished order dated December 4, 1984, the Licensing Board granted LILCO's motion and permitted any party to file a contention challenging the lower "qualified load" rating proposed by LILCO.

(Footnote cont'd from previous page)

continuous and short-time ratings as follows:

> 3.7.1 continuous rating. The electric power output capability that the diesel-generator unit can maintain in the service environment for 8760 h[ours] of operation per (common) year with only scheduled outages for maintenance.
>
> 3.7.2 short time rating. The electric power output capability that the diesel-generator unit can maintain in the service environment for 2 h[ours] in any 24 h[our] period, without exceeding the manufacturer's design limits and without reducing the maintenance interval established for the continuous rating.

This IEEE Standard is referred to by Regulatory Guide 1.9 as delineating "...principal design criteria and qualification testing requirements that, if followed, will ensure that selected diesel generator units will meet their performance and reliability requirements." Regulatory Guide 1.9, Rev. 2, December 1979, at 1 §B.

4/ The NRC Staff introduced the concept of a "qualified load" as an interim licensing basis for the EDGs and other emergency diesel generators manufactured by Transamerica Delaval, Inc. The "qualified load" is that load at which certain key components of the EDGs have successfully operated for at least 740 hours and which bounds the maximum load existing on any EDG during a loss of off-site power coincident with a loss of cooling accident. (Decision at 89-90.)

On December 17, 1984, the County and the State jointly moved to admit an additional contention. As modified and admitted by the Licensing Board's January 18, 1985 unpublished order, the new EDG load contention specifically alleged that the EDGs with a maximum "qualified load" of 3300kW as the Maximum Permitted Load did not provide sufficient capacity and capability to assure various safety functions because the qualified load did not encompass all of the loads that could be imposed on the EDGs, including loads that may be imposed due to operator error.

The reopened hearings began on February 12, 1985, and the record was closed on March 12, 1985. On June 14, 1985, the Licensing Board issued its partial initial decision holding that the EDGs complied with GDC 17 and authorizing the Staff to issue a low-power operating license for the Shoreham plant.

III. ARGUMENT

The Licensing Board erroneously excluded evidence showing that GDC 17 has been consistently interpreted and applied to require that the Maximum Permitted Load of emergency diesel generators must be substantially higher than their MESLs. Since the Maximum Permitted Load for the EDGs at Shoreham is nearly the same as their highest MESLs, the Board applied an incorrect and lower GDC 17 standard to the Shoreham EDGs.

The Shoreham plant was designed so that the EDGs would comprise the on-site source of AC electrical power. Accordingly, the EDGs are required to comply with GDC 17. GDC 17, however, is not prescriptive, i.e., it does not set forth a definitive quantifiable standard by which to judge the adequacy of EDGs. GDC 17 merely provides that, in the assumed absence of the off-site electric power system, the on-site electric power system must have sufficient capacity and capability to assure the functioning of structures, systems and components important to safety.5/

5/ GDC 17 provides in pertinent part that in the assumed absence of the off-site electrical system, the EDGs must:

> provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

Traditionally, and in all prior cases, the standard practice in the nuclear industry for determining whether EDGs comply with GDC 17 has been to refer to their continuous and short-time ratings. (Decision at 18.) To ensure that an EDG has sufficient capacity and capability to handle the maximum loads imposed on it, the Staff's standard practice is to confirm that the continuous rating[6/], which constitutes the Maximum Permitted Load, encompassses the MESL and that the short-time rating[7/] encompasses the MESL plus the single highest additional load that could be connected by an operator. (Knox, ff. Tr. 27,735, at 9; Tr. 27,997-98 (Knox); Tr. 27,952-53, 27,980 (Berlinger).) In this case, however, both LILCO and the Staff abandoned the traditional approach in favor of the "qualified load" approach, because the Staff determined that the Shoreham EDGs' continuous and short-time ratings could not be relied upon to assure that they had sufficient capacity and capability to comply with GDC 17. (Tr. 27,962-65, 27,968-69, 27,981-84 (Berlinger).) Under this novel approach, the Staff required only that the Maximum Permitted Load rating of the EDGs, the "qualified load" rating, exceed the MESL. (Tr. 27,967-89 (Berlinger).)

6/ See note 3.

7/ Id.

The EDG load contention alleged that the EDGs did not comply with GDC 17 because the "qualified load" rating did not provide sufficient capacity and capability as required by GDC 17. In support of this contention, the County attempted to introduce evidence showing that GDC 17 has been consistently interpreted and applied by the nuclear industry and the NRC Staff to require that the Maximum Permitted Load of EDGs must be substantially greater than their MESLs. In its February 11, 1985 unpublished order, however, the Licensing Board refused to admit this evidence as irrelevant and immaterial. Id. at 3.[8] The Licensing Board's exclusion of this evidence was reversible error.

8/ As submitted by the County and the State, the proposed EDG load contention also alleged that the "qualified load" of 3300kW did not provide sufficient capacity and capability to assure that the requirements of GDC 17 would be met because "[t]here is little or no margin between 3300kW and the maximum emergency service loads for the EDGs, in sharp contrast to emergency diesel generators at other nuclear plants where a substantial margin provides adequate assurance of requisite reliability under GDC 17." By order dated January 18, 1985, the Licensing Board refused to admit this portion of the proposed contention as unnecessarily redundant of the admitted portion of the contention. Id. at 8. The Licensing Board also ruled that, to the extent that admission of this portion of the proposed contention "would arguably include consideration of margin at other nuclear plants, such litigation would be irrelevant or at least so remotely collateral to the material issues before us as to be digressive without any redeeming usefulness." Id.

The excluded evidence[9/] demonstrates that the standard practice and the GDC 17 requirement in the licensing of boiling water reactors ("BWRs") has been to provide for substantial capacity and capability, or margin, between the MESL and the Maximum Permitted Load at which EDGs are permitted to operate, as shown by their performance ratings. The excluded evidence shows that for 27 BWRs licensed by the NRC Staff from 1969 through 1984, the average continuous and short-time EDG performance ratings (which constitute the Maximum Permitted Loads) exceed the MESLs by over 24 and 33 percent, respectively. Furthermore, the excluded evidence shows that the smallest difference between the Maximum Permitted Load and the MESL at any of these plants is just under 10 percent and the largest difference is more than 100 percent. In contrast, the Maximum Permitted Load of the EDGs at Shoreham (3300kW) is only 1.4 percent higher than their highest MESL. (Bridenbaugh and Minor, ff. Tr. 27,500, at 20.) The excluded evidence also demonstrates that the NRC Staff confirmed that the Maximum Permitted Loads of all EDGs at licensed BWRs are substantially greater than their MESLs.

9/ See Attachment.

The excluded evidence is clearly relevant and material to the EDG load contention. The evidence of the substantial difference between the MESLs and the Maximum Permitted Loads of EDGs at all other BWRs demonstrates the accepted and proper interpretation of the GDC 17 requirement that EDGs have "sufficient capacity and capability" to assure various safety functions. This evidence is clearly relevant and material to the EDG load contention because it demonstrates how GDC 17 has been interpreted and applied in prior licensing actions.10/

Indeed, the excluded evidence is particularly relevant and material because GDC 17 does not specify any empirical standards for evaluating the EDGs, but provides only subjective guidance. In these circumstances, where the regulatory standards are not totally free from ambiguity, the past practice of the NRC Staff and the nuclear industry in interpreting and applying GDC 17 is not only relevant and material, but it is the best evidence of what GDC 17 really means.11/

10/ Similarly, the Licensing Board erred by refusing to permit the County to cross-examine LILCO and NRC Staff witnesses concerning the substantial difference between the Maximum Permitted Loads and the MESLs of EDGs at other BWRs and as to the Colt EDGs which LILCO intends to install in addition to the EDGs already in place at Shoreham. (Tr. 27,247, 28,366-67).

11/ Thus, in North Anna Environmental Coalition v. NRC, 533 F.2d 655, 665 (D.C. Cir. 1976), the court upheld the NRC's

(Footnote cont'd next page)

The excluded evidence demonstrates that the Licensing Board applied a lower and erroneous standard of compliance with GDC 17 to the troubled Shoreham EDGs than has been applied to reliable EDGs. Although the Licensing Board clearly viewed the Shoreham EDGs as suspect and restricted their operation to loads 600kW less than their former short-time rating because they have experienced so many problems[12/], the Board

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interpretation of certain regulations based upon the testimony of NRC Staff members who had been involved in promulgating those regulations. Because such evidence is relevant and properly considered, evidence of the NRC Staff's application of its regulations (which establishes the NRC's actual practice in interpreting the regulations) is equally admissible and properly considered here.

Not only is the NRC Staff's past practice in interpreting GDC 17 extremely relevant and material, but considerable deference must be accorded to it, particularly when as here that interpretation has been followed consistently over a long period of time. See, e.g., United States v. Clark, 454 U.S. 555, 565 (1982); Northern Indiana Public Service Commission v. Porter County Chapter of the Izaak Walton League of America, Inc., 423 U.S. 12, 14 (1975); Power Reactor Dev. Co. v. International Union of Electrical, Radio, and Machine Workers, 367 U.S. 396, 408 (1961).

12/ The Licensing Board held that the Shoreham EDGs can be operated safely for a total of only 2 hours at loads between 3300kW and 3400kW up to the first refueling outage (approximately 18 months). (Decision at 82-83.) In contrast, the short-time rating of other EDGs requires that they be capable of operating at overload for 2 hours in every 24 hours for 1 year (a total of 730 hours). See note 3.

nonetheless permits operation of the EDGs with a margin of only 1.4 percent between their MESL and their Maximum Permitted Load. This is a far less stringent standard than has been applied to all other BWR EDGs which have not had problems and which are not suspect. In short, the Board overlooks evidence that GDC 17 has been interpreted to involve a standard for reliable EDGs that is more than 20 times higher on average than the standard applied to the troubled Shoreham EDGs. The citizens of Suffolk County and the State of New York are entitled to no less protection than is accorded to persons residing near other BWRs.

The Board's exclusion of the evidence also precluded the County from showing that GDC 17 requires that EDGs have sufficient margin between their MESLs and their Maximum Permitted Loads so that they can accommodate additional loads that may be manually connected either erroneously or purposely to more efficiently and safely respond to an emergency. The Licensing Board's erroneous interpretation of GDC 17 as not requiring sufficient capacity and capability to accommodate such loads ignores that nothing can ensure that an operator will not erroneously add loads and unduly restricts operators' flexibility to deal with emergencies. (Tr. 27,916-17 (Hodges, Clifford); Tr. 28,091 (Clifford); Bridenbaugh and Minor, ff. Tr. 27,500,

at 24-28; Tr. 27,542, 27,566 (Bridenbaugh).) The evidence clearly established that the capacity and capability of the EDGs to handle such loads must be considered in determining whether the EDGs compiled with GDC 17.13/ At Shoreham, the single worst case loads that could be added to the EDGs after a loss of off-site power would result in loads of 3839.2kW, 3627.6kW and 3867.3kW. (Decision at 103). The Maximum Permitted Load of the Shoreham EDGs, the 3300kW "qualified load" rating, is significantly less than these loads. (Id.)14/

13/ The NRC Staff's standard practice for determining whether EDGs comply with GDC 17 is to confirm that their highest ratings (usually the short-time ratings) encompass their MESLs plus the single largest loads that may be connected to the generators either intentionally or inadvertently through operator error. (Knox, ff. Tr. 27,735, at 9; Tr. 27,997-98 (Knox); Tr. 27,952-53, 27,759-60, 27,980 (Berlinger); Bridenbaugh and Minor, ff. 27,500, at 11.) The evidence further established that the Staff knows of no instance in which the highest rating of an EDG at a licensed BWR does not encompass such loads. (Tr. 27,957 (Hodges); Tr. 27,960, 28,036 (Buzy).)

14/ The Licensing Board seems to suggest that the EDGs comply with GDC 17 because no single operator action can cause the load on more than one EDG to exceed the qualified load. (Decision at 103.) Such an interpretation confuses the single failure criterion of GDC 17 with the separate and additional requirement that the EDGs have "sufficient capacity and capability." By its own plain terms, the single failure criterion of GDC 17 addresses only whether the EDGs have "sufficient independence, redundancy, and testability" to perform their safety functions assuming a single failure, not whether the EDGs have sufficient capacity to handle the additional electrical loads that may be imposed on them by operator action.

In summary, the Licensing Board's erroneous exclusion of this evidence precluded the County and the State from introducing vital evidence on how the requirements of GDC 17 have been interpreted and applied in the past and, accordingly, how GDC 17 should have been interpreted and applied in this case. The exclusion of this evidence was particularly prejudicial because the Staff's position in this case that the EDGs have sufficient capacity and capability flies in the face of its consistent application and interpretation of GDC 17 requirements. The exclusion of such evidence by the Licensing Board created a gaping hole in the administrative record and is clear reversible error.

IV. CONCLUSION

For the foregoing reasons, the Licensing Board's June 14, 1985, decision must be reversed.

Respectfully submitted,

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Date: July 17, 1985

ATTACHMENT

SUFFOLK COUNTY, January 25, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
LONG ISLAND LIGHTING COMPANY	)	Docket No. 50-322-OL
(Shoreham Nuclear Power Station, Unit 1)	)	

TESTIMONY OF DALE G. BRIDENBAUGH AND GREGORY C. MINOR REGARDING SUFFOLK COUNTY'S EMERGENCY DIESEL GENERATOR LOAD CONTENTION

Testimony, Attachment and Exhibits

A.14. It is essential that enough margin is available to ensure that all expected loads, including cyclic loads, can be accomodated, taking into account the modeling and other uncertainties inherent in predicting the accident condition, plus providing some margin so that the plant operators will not be restricted in their manual load transfers and manipulations in the later stages of the accident. Moreover, as previously testified to by the County's witnesses, it is industry practice to operate diesel engines at only about 75 to 85 percent of their maximum rated loads, in order not to overstress the engine and to enhance reliability.14/ It has been the standard practice in the licensing of all boiling water reactors ("BWRs") in the past to provide for a significant margin between the MESL and the maximum rated load of emergency diesel generators, regardless of whether cyclic loads are included.

We have performed a survey of the onsite emergency power supply characteristics of all BWRs that have received their operating licenses as of December 31, 1984. Our survey includes some 27 BWRs licensed during the fifteen year period from 1969 through 1984 and a range of power ratings from 500MW

14/ Joint Testimony of Dr. Robert N. Anderson, et al., regarding Suffolk County's Emergency Diesel Generator Contentions, at 18.

to 1300MW. The average EDG rating exceeds the expected peak load (maximum emergency service load) by over 33 percent. The lowest margin we have been able to find is 9.9 percent while the largest is more than 100 percent. A listing of the plants and respective loads and ratings is presented in Exhibit 3. This data is extremely important because it demonstrates the accepted interpretation of the requirements of GDC 17 as to the sufficient capacity and capability to assure appropriate responses to postulated accidents.

Q.15. Has the NRC Staff confirmed your view that all BWRs that have been licensed have had a substantial degree of margin between the maximum emergency service loads and the ratings of their EDGs?

A.15. Yes, it has. The Transamerica Delaval Diesel Generator Owners Group Program Plan, NRC Safety Evaluation Report, August 13, 1984, at 9, states that

> " the staff notes that for many plants, that the maximum emergency service load requirements for worst case loss of off-site power or loss of off-site power and Loss of Coolant Accidents are significantly less than the engine name plate rating."

In addition, Dr. Carl H. Berlinger of the NRC Staff has further stated, with respect to the above-quoted SER language, that:

" 'many plants' refers to just about every plant that I am familiar with that is either in operation or under construction in the United States. I don't know of any exception to that."15/

Q.16. Are all of the emergency loads precisely known at Shoreham?

A.16. No. LILCO has attempted to measure individual loads and in fact used some of the measured loads to reduce or increase the contribution of that load to each EDG's MESL. However, LILCO still proposes that name plate values be used for the majority of the MESL loads, thus providing little assurance that the name plate values may not be exceeded under certain circumstances. LILCO also performed an integrated electrical test ("IET") which apparently was an attempt to verify that the appropriate conservatism does exist in the maximum load that each EDG may experience. The IET, however, did not measure individual equipment loads.16/ Moreover, this test contains a substantial amount of uncertainty as it was simply a measurement of combined loads of equipment assumed by LILCO to operate in a LOOP/LOCA. Because there is no assurance that the

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15/ Deposition of Carl H. Berlinger, December 13, 1984, at 5. (Exhibit 4).

16/ SNRC-1074, J.D. Leonard Jr. to H.R. Denton, NRC, August 22, 1984, at 2.

Type of Load	EDG 101	EDG 102	EDG 103
Measured Loads	34%	35%	64%
Name Plate Loads	66%	65%	36%

If we conservatively assume that the measured loads are at best accurate to ± 2-1/2 percent system error, and that the name plate loads are at best accurate to ±5 percent, we can conclude that the total load defined for the MESL is no more accurate than ±3.9 percent. Thus, the peak load might well be 128kW higher than LILCO has specified.

Q.20. What is the margin for the EDGs at Shoreham?

A.20. The difference between the highest EDG maximum emergency service load calculated by LILCO (3253.3kW) and the 3300kW maximum load at which the EDGs may operate is only 46.7kW, or 1.4 percent of the maximum load allowed. This small margin assumes no increases in the maximum emergency service loads due to the factors discussed above.

Q.21. What then do you conclude as to the need for margin in onsite emergency power systems at BWRs in general and at Shoreham in particular?

A.21. No BWR has ever been licensed by the NRC in the past without a substantial amount of margin between the expected maximum emergency service load and the EDG continuous or short-term rating. This history clearly establishes the accepted requirements of EDG capacity and capability under GDC 17

to provide sufficient reliability. The proposal by LILCO at Shoreham, where essentially no margin is being provided between the qualified rating (3300kW) of the EDGs and the predicted MESL (peak of 3253kW), a margin of less than 1.5 percent, does not therefore meet the requirements of GDC 17. There is, accordingly, little or no margin available at Shoreham to accomodate the cyclic loads which are known to be approximately 5 percent of the EDG rating, none for the potential peak load measurement/calculational error of approximate 3.9 percent, and none to provide for the modeling, calculational, and other uncertainties inherent in the accident scenario forecast.

Q.22. Are there concerns present in the onsite emergency power scheme proposed by LILCO other than the inadequacy of the qualified load you have described above?

A.22. Yes there are. One such inadequacy is the fact that LILCO did not consider the potential effect of the inaccuracy of the EDG load indicating instrumentation in the design and conduct of the load qualification test. This deficiency relates to section (a)(ii) of the Contention which states:

"diesel load meter instrument error was not considered."

Q.23. How has the EDG load meter instrumentation error affected the "qualified" load of the EDGs?

EXHIBIT 85

Ratings and LOOP/LOCA Loads[1]

Plant	Unit Rating (MW)	In Service	EDG Rating (kW) Continuous Rating	EDG Rating (kW) 2000-Hour Rating	Peak Load (kW)[2]	% Margin (% of peak load) Continous Rating	% Margin (% of peak load) 2000-Hour Rating
Oyster Creek	650	1969	2500	4/	1950	28.2	--
Duane Arnold	597	1975	2850	3000	2480	14.9	21.0
Cooper	836	1974	4000	4700	3619	10.5	29.9
Dresden 2-3	828/828	1970/71	2600	2860	1950	33.3	46.7
Quad Cities 1-2	828/828	1973/73	2500	2850	1980	26.3	43.9
Pilgrim	678	1972	2600	2860	2398	8.4	19.3
Peach Bottom 2-3	1152/1152	1974/74	3250	4/	2560	7.0	--
Brunswick 1-2	867/867	1977/75	3500	3850	2311	51.4	66.6
Hatch 1-2	850/850	1975/79	2850	3100	2669	6.8	16.1
LaSalle 1-2	1078/1078	1984/84	2600	2250[5]/	2860	15.6	27.1
WPPS-2	1100	1984	4400	4650	3860	14.0	20.5
Susquehanna 1-2	1152/1152	1983/85	4000	4700	3542	12.9	32.7
Fitzpatrick	883	1975	2600	4/	1906	36.4	--
Browns Ferry 1, 2, 3	1152/1152/ 1152	1974/75/73	3/	2850	2594	--	9.9
Nine Mile Pt.	642	1969	2560	2950[7]/	1470	74.1	100.6
Vermont Yankee	563	1972	3000	4/	2446	22.6	--
Millstone 1	662	1971	2765[6]/	3042	2678	3.3	13.6
Monticello	569	1971	2500	4/	2002	24.9	--
					AVERAGE	24.3	33.4

NOTES:

(1) All data taken from USNRC Public Document Room FSARs and USNRC NUREG 0020.
(2) Peak load requirement based on auto-start loads listed in the FSARs.
(3) FSAR does not provide a continuous rating. The 7 day rating is 2950kW and the 30 minute rating is 3050kW.
(4) FSAR does not provide a 2000-hour rating.
(5) This peak load does not include the EDG dedicated to the HPCS. Peak load on the HPCS EDG is 2719kW.
(6) The single Millstone EDG is backed up by a 12MW gas turbine.
(7) This is actually the 1500-hour rating.

EXHIBIT A86

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:	:	
LONG ISLAND LIGHTING COMPANY	:	Docket No. 50-322-1 (OL)
(Shoreham Nuclear Power Station)	:	

DEPOSITION OF CARL H. BERLINGER

Bethesda, Maryland
Thursday, December 13, 1984

Deposition of CARL H. BERLINGER, called for examination pursuant to agreement by counsel, at the Nuclear Regulatory Commission, [illegible]yland National Bank Building, 7735 Old Georgetown Road, at 12:45 p.m. before ANNE G. BLOOM, a Notary Public within and for the District of Columbia, when were present on behalf of the respective parties:

ALAN ROY DYNNER, ESQ.
DOUGLAS SCHEIDT, ESQ.
Kirkpatrick, Lockhart, Hill,
Christopher & Phillips
1900 M Street, N.W.
Washington, D. C. 20036
On behalf of Intervenor Suffolk County.

-- continued --

agb

please?

A Got it.

Q In the last paragraph on that page you see there is a reference or a statement as follows:

"The Staff notes that for many plants the maximum emergency service load requirements for worst-case loss of off-site power or loss of off-site power and loss of coolant accidents are significantly less than the engine nameplate rating."

A Yes, I see that.

Q Can you tell me what are the "many plants" that you are referring to in that statement?

A "Many plants" refers to just about every plant that I am familiar with that is either in operation or under construction in the United States. I don't know of an exception to that.

Q Could you tell me generally speaking what is the difference in those many plants?

I am asking for an approximation or a percentage between the continuous rating of the EDGs there on the one hand and the maximum emergency service load requirements on

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Before the Atomic Safety and Licensing Appeal Board

In the Matter of LONG ISLAND LIGHTING COMPANY (Shoreham Nuclear Power Station, Unit 1)	Docket No. 50-322-OL

CERTIFICATE OF SERVICE

I hereby certify that copies of SUFFOLK COUNTY AND STATE OF NEW YORK BRIEF IN SUPPORT OF APPEAL OF JUNE 14, 1985, ASLB DECISION, dated July 17, 1985, have been served on the following this 17th day of July, 1985, by U.S. mail, first class, except as otherwise indicated.

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