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THE LILCO/EUDSON INSTITUTE REPORT ON SHOREHAM:

AN ANALYSIS OF ERRORS

CONCERNING PROPERTY TAXES AND EMPLOYMENT

August 30, 1983

For the County of Suffolk, New York

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New York

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Consultants to Labor	Utility Rate Analysis	Collective Bargaining	Regulatory Testimony	Legislative Analysis
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THE HUDSON INSTITUTE REPORT ON SHOREHAM

AN ANALYSIS

The Hudson Institute's August 8 report, "The Potential Impact of Failure to Open Shoreham," prepared for Long Island Lighting Company, contains serious errors, wrong data and incorrect formulas -- all of which reflect Hudson's unsupported and unjustified adherence to LILCO methods, data and assumptions.

Union Associates has analyzed the two sections of the Hudson report which concern the consequences of abandoning the construction of the Shoreham nuclear plant on property taxes and on employment.

Property Taxes

Section V of the Hudson report, which evaluates the impact of abandonment on property taxes, contains serious errors. Out of either ignorance of local tax assessment practices, or to save itself the trouble of learning Long Island's complex tax system, Hudson based its entire analysis on the following assumptions, assumptions which are dead wrong:

- > Hudson assumes, apparently by guessing, that taxes on

the Shoreham plant will increase by 10% per year from this year's assessment.

- > Hudson fails to consider the effect of depreciation on the assessment of utility property as required by New York law.

- > Hudson fails to properly account for the substantial taxes that will be collected during the construction of plant that will replace Shoreham.

- > Hudson fails to properly account for the substantial taxes that Island Park and Port Jefferson will receive during the construction phase of planned coal conversions.

- > Hudson assumes that Jamesport has the same tax rate as Shoreham and that Port Jefferson and Island Park share the same tax rate.

- > Hudson assumes the same tax collections on coal plants as on Shoreham 25 years from now.

- > Hudson calculates no assessment on Shoreham after its termination.

> Hudson raises the spectre of LILCO recapturing past property tax payments made to the Shoreham/Wading River School District, the Town of Brookhaven and the County of Suffolk.

Union Associates' comments are based on an extensive analysis of Long Island property taxes. This analysis required a review of state guidelines for utility property assessment, interviews and work with the taxing authorities themselves and incorporation of information from LILCO records.

The 10% guess. On page V-18 of its report, Hudson indicates that it **assumes** a 10% increase in tax payments each year on Shoreham between 1984 and 1992 and a 6% per year increase thereafter. The figures are no more than a guess and a wrong guess at that. In fact, a far lower rate of increase in property taxes payments is likely.

No depreciation figured. Hudson attempts to justify its 10% guess by noting that the historical rise in tax levies on Shoreham has exceeded that sum. Here Hudson displays ignorance of tax assessment guidelines. Taxes are assessed on the reproduction cost of existing plant less depreciation. During the construction phase, taxes grow enormously as investment

increases and depreciation remains nil. Thus, the historical growth rate provides no basis for projecting future tax rates. Hudson's calculations provide no recognition at all of the important role of depreciation in assessments.

Taxes during construction. As opposed to applying the correct assessment guidelines, Hudson's treatment of taxes on the plant that LILCO assumes would replace Shoreham -- two new coal plants and conversion of two oil units to coal -- appears designed to save time or support a pre-conceived conclusion. While knowing full well that LILCO has paid property taxes on Shoreham during its construction, Hudson's Table V-3 excludes any sum for tax payments during the construction phase of the coal conversions. Table V-2 seems to repeat this error, forgetting to include the enormous property taxes that will be paid on coal plants during their years of construction. The difference completely undermines Hudson's conclusion that, over the next decades, Shoreham's termination will reduce property tax collections.

Tax rate assumptions wrong. While it makes calculations easier and neater to assume equal tax rates across taxing jurisdictions, it is wrong. Hudson assumes that taxes on new coal plant would be the same whether the plant is sited at Shoreham or Jamesport or anywhere else. Placing the plant in Port Jefferson, for example, would substantially increase the levy on the plant -- by about \$1 billion over its life in current dollars.

Hudson repeats its error of convenience in projecting assessments on the oil plants converted to coal. Hudson assumes that the assessment rates in Island Park (location of the Barrett plants) and Port Jefferson are the same, an assumption which simply is wrong.

Future coal plant taxes.

Hudson states that,

Various tax rate assumptions about the cost of coal plants are utilized to force the two streams of tax burdens [coal and nuclear] to be equal after the first 800 megawatt coal unit is installed in 2009. Page V-22. Emphasis added.

While it eases the work to "force" data into a pre-conceived pattern, forced data cannot be used as a basis for Hudson's claims about future property taxes -- especially given that their assumption contradict state assessment rules. State guidelines require a provision for depreciation which would produce quite different tax revenue streams for a coal and nuclear plant. Hudson's failure to account for depreciation in assessing property leads to its incorrect conclusions. In fact, the coal

plants will produce greater tax revenue than Shoreham in most of those later years.

Hudson's tax holiday for Shoreham.

Hudson opines that, "a closing of Shoreham reduces taxes by \$40.85 million (the nonviable site would carry some low tax burden.)" Page V-22. From the Hudson tables, it appears that Hudson finds this tax on Shoreham closed too meager to incorporate in their analysis. Hudson does not provide any justification for this tax holiday for the Shoreham plant following its abandonment.

In fact, for a number of years after its abandonment, assessments on Shoreham could substantially maintain, or even exceed, the relatively small amounts paid thus far during its construction. Further, Hudson's findings do not square with the statement of LILCO's own President, Wilfred Uhl, who suggested that the plant will probably remain taxable until completely dismantled. Dr. Howard Axelrod, of the staff of the Governor's panel on Shoreham, found that assessments on terminated projects may be substantial, though not as high as the plant operating. Finally, our interviews with the taxing authorities themselves and a review of state guidelines on assessment lead us to conclude that Shoreham will be assessed after abandonment. The assessment could be

especially large if the Company is given any return on the property.

The recapture threat. At page V-21, Hudson raises questions about the financial security of Shoreham/Wading River School District and the Township of Brookhaven by asserting that LILCO could recapture all the taxes assessed over the past decade on Shoreham's construction. Hudson does not provide any basis for its assertion and thus we discount the threat as mere rhetoric.

In contrast to Hudson, Union Associates has constructed a model of Long Island property taxes which incorporates the complexities of the law, actual assessment practices and the equalization and millage rates for each school district and taxing authority on Long Island. The findings of our model have been presented to the Governor's panel on Shoreham.

EMPLOYMENT

As in its rushed error-ridden comments on property taxes, the Hudson Institute's comments on supposed job losses were Shoreham to close, Hudson Institute, in fact, failed to perform any analysis of the economy using local data.

For example, Hudson assumes that the regional employment multiplier for Long Island, which measures indirect employment created by direct employment, is 2.5 -- on the reasoning that, "multipliers have generally been found in the range of 2-3." Page VII-2. In other words, the Hudson figure is nothing more than a hunch based on studies of areas other than Long Island. By contrast, Union Associates has based its employment projections on a recognized employment model with location factors specific to the Nassau-Suffolk area.

Hudson also makes a number of general comments about "migration" of industry but seems incapable or uninterested in determining which industries might leave Long Island. By contrast, via a model which identifies energy-cost-sensitive local industries, Union Associates has identified those industries which LILCO would force from Long Island with high electric rates. Such industries, including plastics, instruments and other key growth sectors, now employ 121,000 persons on Long Island.

Hudson also fails to fully account for the substantial number of jobs created by building new plant or maintaining old plant to replace Shoreham.

- > While Hudson admits that Shoreham's operation provides relatively few jobs (500), it claims that this will

provide more jobs than building and operating two coal plants (see section V-P). Hudson failed to include the number of jobs which would be created indirectly by local expenditures on the coal plants. The Union Associates input-output model of local employment indicates that coal plant construction would produce a total of 3,563 jobs per year for a decade.

- > Hudson similarly fails to fully calculate the indirect employment created by conversion of oil plants to coal.

- > Hudson fails to calculate the number of jobs created by dismantling Shoreham -- though it included the cost of those jobs in determining post-cancellation rates.

At page VII-9, Hudson states that,

An increase of electricity rates to Long Island homeowners of \$100 million per year, for example, could reduce housing values by the value of the stream of future costs. Depending on assumptions, this would be in the range of \$600 million to \$1 billion.

We agree that Shoreham-induced rate increases will reduce

property values: if Shoreham operates, bills will rise at least \$300 million per year, assuming that LILCO receives full recovery on the plant as it demands. Hudson fails to include Shoreham's second blow to home values: the loss in home values in Brookhaven Township and environs due to the proximity of an operating nuclear plant. Our own econometric model of home values coupled with extensive market research indicates that home values will decline a total of \$410 million in the area near the Shoreham plant if the plant operates.

Hudson's Reliance on LILCO's Data

Hudson's extraordinary reliance on LILCO for data and methodology deserves special note. For the past fifteen years, LILCO's projections about Shoreham, whether it be construction cost or power demand projections or date of completion, have been wrong. Given LILCO's history of error, Hudson's unquestioning reliance on LILCO's assumptions renders the Hudson study useless as an independent guide to the economic impact of operating Shoreham.

The impropriety of Hudson's reliance on LILCO data is illustrated by a key assumption which proved wrong one day after the report's release: Hudson rests its conclusion on Shoreham costing \$3.2 billion to complete. The day after LILCO released the Hudson

report, LILCO added \$200 million to the cost of completing Shoreham -- and one week after that announced problems with a back-up generator that could add hundreds of millions more in interest charges alone.

Many of Hudson's conclusions rest LILCO's assertion that investors must receive 100% of their expected profit on Shoreham if the plant is abandoned -- even though no other state in the nation has provided a 100% recovery of both investment and profit on a closed plant. New York law prohibits a profit on utility property "neither used nor useful." It simply is not reasonable to assume a 100% profit on Shoreham closed.

COUNTY OF SUFFOLK



PETER F. COHALAN
SUFFOLK COUNTY EXECUTIVE

OFFICE OF THE COUNTY EXECUTIVE

FRANK R. JONES
DEPUTY COUNTY EXECUTIVE

August 30, 1983

To The Chairman And Members
of Governor Cuomo's
Shoreham Commission

Dear Mr. Chairman and Members of the Commission:

On August 8, 1983, LILCO presented to this Commission a "Draft Final Report" prepared for LILCO by several employees of the Hudson Institute, entitled "The Potential Impact of Failure to Open Shoreham" (hereinafter "Report"). The Report purports to constitute an "independent" evaluation of the economic impacts which would result from a decision to abandon the Shoreham Nuclear Power Plant. The LILCO-sponsored Report, which was covered extensively by the News media, concluded that rates would increase by 76 percent if Shoreham were abandoned, as compared to an assumed 56 percent rate increase if Shoreham were operated.

Suffolk County's consultants have completed a preliminary review of the Report. I hereby transmit to you the results of that review: first, by ESRG and Georgetown Consulting Group, a document entitled, "Critique of the Hudson Institute/LILCO Defense of Shoreham Economics"; and second, by Union Associates, a document entitled, "The LILCO/Hudson Institute Report on Shoreham: An Analysis of Errors Concerning Property Taxes and Employment."

The LILCO-sponsored Report, as demonstrated by the two studies you receive herewith, does not constitute a serious or sound evaluation of the economic issues confronting this Commission. Rather, the Report contains pervasive errors which completely undermine the value and credibility of the report. Indeed, when the Report is corrected for its errors, it is clear that the abandonment of Shoreham will result in nothing approaching the 76 percent rate increase which the Report predicts.

Let me highlight briefly several of the most blatant errors in the LILCO-sponsored Report.

1. The Report's 320 Percent Error. The authors of the Report have committed a systematic error in computing the "rate penalty" which allegedly would be suffered if Shoreham were abandoned. When comparing the costs to ratepayers of Shoreham operating versus the cost to ratepayers of Shoreham being abandoned, it is essential to compare all of the revenues which are required in the Shoreham-in and Shoreham-out scenarios. Either through carelessness, or perhaps even a predisposition to overstate the alleged rate penalty of abandoning Shoreham, the Report systematically understates the required revenue impact figures for the Shoreham-in and Shoreham-out scenarios by 320 percent. Thus, all of the Shoreham ratepayer comparison figures provided in the LILCO-sponsored Report overstate the alleged rate penalty of abandoning Shoreham by 320 percent.

What is the effect of this 320 percent error when the results of the Report are compared with those presented to this Commission by ESRG on July 15, 1983? In the ESRG analysis, it was concluded that if the plant were abandoned and if LILCO received a 100 percent return on and of its investment (a windfall result for LILCO which the County strongly would oppose), the rates incurred by LILCO ratepayers would be 2.2 percent higher than if Shoreham were to operate. The LILCO-sponsored Report estimates that rates incurred if Shoreham were abandoned would be 34-38% higher than if Shoreham were to operate. However, when correction is made for the Report's error, the LILCO-sponsored Report would conclude that rates for an abandoned Shoreham would be about 10 percent higher than with Shoreham operating. Significantly, however, even that 10 percent excess is predicated upon the Report's use of unsupportable assumptions, some of which are discussed below. If fair assumptions were used, the Report would not show an economic "penalty" for abandonment of Shoreham. Thus, it is clear that the much publicized LILCO-sponsored Report has vastly overstated the worst case ratepayer "penalty" which might be incurred if Shoreham were abandoned.

For example, the LILCO-sponsored Report largely accepts LILCO's unsupported prediction that peak demand for electric power will rise by 1.6 percent per year in the future.

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In fact, however, as documented by the ESRG study and by the most recent State of New York forecasts, peak demand is likely to grow much slower in the future. This load forecast error in the LILCO-sponsored Report, by itself, results in an incorrect 1.1 percent rate increase attributed to the abandonment case. When the rest of the Report's figures are similarly adjusted on the basis of realistic conservative data (as opposed to the largely unsupported LILCO predictions which the Report accepts), it is clear that rate increases if Shoreham were abandoned would be much less than the Report predicts, even if LILCO is permitted a substantial return on its investment.

2. Lack of Analyses in the Report. The authors of the LILCO-sponsored Report performed virtually no analyses of their own to compare the assumptions used in the studies of the County and LILCO. Indeed, the Report states:

No attempt was made to perform an independent, detailed cost and operations analysis of Long Island electric demand and supplies.
(p. 111-2).

Rather, the authors of the Report purport to have performed "an independent assessment of the appropriateness of alternate assumptions" (p. 111-2) made by LILCO and County consultants. In fact, however, in virtually every instance, the Report simply accepts the data provided by LILCO, even though LILCO over recent years has been demonstrated to be incapable of making accurate predictions about Shoreham or growth in electricity demand.

An example of the Report's blind acceptance of LILCO data is in the area of the predicted capacity factor which Shoreham would achieve. ESRG arrived at a predicted capacity factor for Shoreham on the basis of a detailed linear regression analysis of nuclear reactor operating history. The regression analysis documented that the average capacity factor achieved by plants with Shoreham's characteristics over the first 10 years of operation was 56.8 percent. The historic average was 54.5 percent. Allowing for some improvement over time, ESRG used in its analysis an assumed 10 year average capacity factor of 58.5 percent.

In contrast, LILCO assumes an average capacity factor of 62 percent for Shoreham for the first 10 years of operation. In arriving at this figure--which the authors of the LILCO-sponsored Report accept--LILCO has committed several serious errors. First, LILCO did not look at all Boiling Water

Reactor ("BWR") operating experience in estimating Shoreham's capacity factor but, instead looked only at selected large BWR's. However, if LILCO considered it appropriate to limit its data base to particular BWR's, it should have looked at those plants which most nearly resemble Shoreham, i.e., the salt water cooled BWR's. If LILCO had done this, it would have found that the average capacity factor achieved by these plants -- plants similar to Shoreham -- was far lower (only 54.5 percent) than the whole class of BWR's. The LILCO-sponsored Report, however, does not even address this basic distinction.

Second, in using operating data from the 20 BWR's it selected, LILCO eliminated the down time experienced by those plants during so-called "extraordinary outages." The "reason" for this adjustment is that LILCO believed the same kinds of outages could not occur at Shoreham because Shoreham is different or has been changed to prevent those outages. This LILCO rationale is unsound. There are an infinite number of scenarios by which an "extraordinary outage" might occur. What LILCO has done -- and what its own sponsored Report has blindly blessed -- is to tamper with data and then, in effect, say that an extraordinary outage cannot occur at Shoreham. That is unacceptable.

3. The Report's Rhetorical Exaggerations. The authors of the Report assert that the Shoreham issues are "clouded by extravagant rhetoric." (p. 1). In fact, it is the Report itself which repeatedly through inaccuracies attempts to portray a spectre of disaster if Shoreham were abandoned. Some examples of the Report's excessive rhetoric are the following:

(i) The Report asserts that it is "ethically disputable" that LILCO should absorb some of the dollars spent on Shoreham because that investment was consistent with New York State policy and because LILCO "has met all the relevant, extraordinarily tight licensing and regulatory requirements of the Federal and State governments." (p. 3, emphasis supplied). This is nonsense. LILCO clearly has not met federal regulations pertaining to emergency planning, and the County believes LILCO will never be able to meet those regulations. That is the central controversy on Long Island today, obvious to everyone except the authors of the LILCO-sponsored Report.

(ii) The Report attributes Shoreham's huge cost overruns and the lengthy delay in completion to "the inefficiencies of the regulatory system and legal changes that (the Report asserts) have delayed the project a decade and quadrupled the real costs" (p. 5). Similarly, the Report states: "The actual construction of Shoreham has been drawn out for a decade by additional requirements, permit procedures, design modifications and new safety regulations." (p. 1-1). Thus, the Report -- written with the diction and tone of LILCO's apologist -- suggests that LILCO was 100 percent blameless for Shoreham's enormous delays and cost overruns.

The authors of the Report performed no analysis to reach these bold conclusions. Instead, they simply relied on LILCO's version of history. No truly independent reviewers would make such sweeping, unsupported statements through blind acceptance of LILCO's self-serving views.

The PSC will make a final decision on the causes of Shoreham's delays and cost overruns. Suffice it to say here, however, that almost everyone is firmly convinced that at least some of the delay and some of the cost overruns are attributable to LILCO's mismanagement of the project.

4. The Report's "Legal" Misstatements. The authors of the Report assert, without presenting any analysis, that if Shoreham is abandoned there must be 100 percent cost recovery by LILCO for all costs unless there is a "legal determination" that LILCO acted "imprudently." (p. 10). However, the allocation of Shoreham costs under various abandonment scenarios cannot be so easily dismissed. The "used and useful" concept is a part of State law and an abandoned Shoreham plant would certainly be neither "used" nor "useful." The fact is that there has never been a mistake on the scale of a \$3.5 - 4.0 billion abandoned plant, and the cost allocation which eventually will be decided upon will necessarily involve important legal and policy questions. The Report does not address these questions and, indeed, its authors would not be qualified to do so even if they were so inclined.

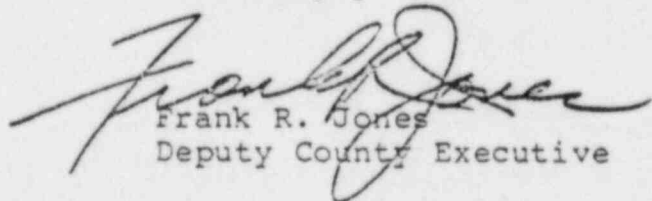
The Report also raises the spectre of disaster to local jurisdictions, arguing that LILCO may have the right to a refund of local property taxes paid while Shoreham has been under construction. (pp. 9d, V-21). Under what legal authority? The Report does not say, but instead raises a mere veiled and unfounded threat. Again, this is hardly the kind of discussion one would expect in a serious economic analysis.

5. Moral Credibility of New York State. The Report asserts that "blocking" the opening of the Shoreham facility would adversely affect "the moral credibility of New York State." (p. 15; also see, pp. VII-15, VII-27.) This is a far-fetched assertion. First, what relevance does this "issue" of "morality" have to a supposedly "independent" economic analysis? Second, in the County's view, moral credibility has pertinence only on one matter: whether the impossibility of providing emergency preparedness for Suffolk County's residents is going to be squarely faced.

In sum, the Shoreham Commission should not accept the LILCO-sponsored Report as a serious or sound analysis of the economic impacts of abandoning Shoreham. When scrutinized, the Report does not present useful data. It is a mere advocacy document -- an apology -- for LILCO.

The abandonment of Shoreham presents challenging economic issues. But, as documented in County studies which have already been provided to the Commission and those which are submitted today, the economic issues are manageable. Indeed, under most circumstances, the impacts would be less severe if Shoreham were abandoned.

Sincerely yours,


Frank R. Jones
Deputy County Executive

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Exhibit II

Estimated Present Value Costs Borne by Current Bondholders,
Ratepayers and Taxpayers in New York
Due to Interest Rate Increases
Caused by Lilco Bankruptcy*

(Billions of Dollars)

	<u>Interest Rate Change Due to</u> <u>Lilco Bankruptcy</u>		
	<u>+1%</u>	<u>+1.3%</u>	<u>+2%</u>
1. Current Bondholders	\$4.38	\$5.57	\$8.26
2. Ratepayers and Taxpayers	1.08	1.33	1.74
3. Total = (1) + (2)	5.46	6.90	10.00

*Assumes 10% coupon and 15 year maturity of outstanding bonds and no net new borrowing in the future. To the extent actual maturities are less than 15 years the fraction of costs borne by ratepayers and taxpayers rises and that borne by current bondholders falls. Ratepayers and taxpayers bear the full additional costs on all new borrowings (not estimated here).

These estimates ignore the costs imposed on utility equityholders and the premiums that would also be demanded in future equity financing.

Exhibit III

Analysis of the Social Costs of Producing Power if Shoreham is Abandoned

(Data are from ESRG Report,¹ July, 1983, Table 11)

Calculation of Total Present Value of Social Costs for the 20 year period
1984-2003 (at 12.64%).

Shoreham Operates

Nuclear Operations and Maintenance	\$ 758.8 Mill.
Net Capital Additions	643.8
Spent Fuel	66.7
Decommissioning Costs	35.3
Nuclear Fuel	343.3
TOTAL ²	<u>\$1,847.9</u>
TOTAL adjusted to eliminate 4% Revenue Tax	<u><u>1,776.8</u></u>

Shoreham Does Not Operate³

Total Make Up Power Cost	\$2,818.8 Mill.
Total adjusted to eliminate 4% Revenue Tax	<u><u>2,710.4</u></u>

Total Present Value of Social
Costs of Not Operating Shoreham = \$2,710.4 - 1,776.8 = \$933.6 Mill.
This is equivalent to a 20 year level annual charge of \$130 million/yr.

¹I have not investigated the procedures used by ESRG to estimate each of the numbers used here. The estimates may be either high or low. This Table is intended to demonstrate the appropriate procedures for calculating the social costs of abandoning Shoreham, and not to endorse ESRG's estimates.

²I have eliminated all taxes including property taxes because they are primarily transfer payments, not social costs. That portion of the taxes that pays for real services such as police, fire protection, etc. are appropriately added back to get the total social costs.

³I have assumed the salvage value equals the Shoreham dismantlement cost.

SHOREHAM COMMISSION MEETING

AUGUST 31, 1983
AGENDA

9:30 a.m.

PANEL MEETING
Board Room - 24th Floor
Public Service Commission
#2 World Trade Center
New York, New York

OVERVIEW Impact of Lilco bankruptcy on Lilco, other
New York State utilities, and New York State.

Professor Michael Jensen - University of
Rochester

PANEL I Impact of Lilco, other New York State utilities,
New York State and New York State communities
considering:

1. Lilco's bankruptcy
2. Stockholder's being held responsible
for large portion of plant costs
3. Long term phase-in of plant costs,
i.e. 10 years

Eugene Meyers - Vice President Corporate Finance-
Kidder-Peabody

James Rothschild - Principal: Georgetown
Consulting Group, Inc.

Roger Taylor - Managing Vice President of
Utility Group - Standard and Poors Corporation

LUNCH BREAK

PANEL II The legality of stockholders being held
responsible for a portion of a prudent
investment if:

1. Shoreham operates
2. Shoreham does not operate

- a. Representative from Attorney General's Office
- b. Bernard Sanoff, Esq. - Kronish, Lieb, Shainswit, Weiner and Hellman

PANEL III STAFF

Economic impact - Shoreham open/not open

FUTURE MEETING:

September 7, 1983

9:30 a.m.

SHOREHAM COMMISSION MEETING
Legislative Hearing Room
Suffolk County Center
Hauppauge, New York

Short presentation from Supervisor Martin Lang -
Town of Southampton

Panel discussion and review of staff reports