Before the
New York State Public Service Commission

In the Matter of

Consolidated Edison of New York, Inc.

Case 07-E-0523

September 7, 2007

Prepared Testimony of:

Harvey Arnett
189 Gordon Road
Carmel, New York 10512

On Behalf of:

The City of New York

Q. Please state you name and address.

A. My name is Harvey Arnett, and my address is 189 Gordon Road, Carmel, New York 10512.

Q. What is your current position?

A. I am an independent consultant doing business as Arnett Energy. For this rate proceeding I have been retained on behalf of the City of New York and the Metropolitan Transportation Authority ("MTA") to analyze certain aspects of Con Edison's rate filing.

Q. Could you briefly describe your education and experience?

A. I graduated from The Cooper Union School of Engineering and Science in June 1970 with a Bachelor of Engineering degree majoring in Chemical Engineering. I then began employment at the Department of Public Service ("DPS") where I was given progressive responsibilities.

In April 2005 I retired from DPS as the Deputy Director of Electric and Gas Rates. By that time I had been a member of the DPS rate team responsible for oversight of Con Edison's Electric and Steam Departments almost 30 years, and had been the lead rate

engineer for that team for 25 years. While at the DPS, I testified before the New York State Commission in 35 proceedings covering a broad range of topics.

Aside from the City, my clients have included Westchester County, the Department of Homeland Security and the District of Columbia Office of the People's Counsel.

I am registered as a Professional Engineer in New York State.

Q. What is the scope of your testimony in this proceeding?

A. Initially, it is important to understand the context in which this unprecedented rate increase is being sought. Con Edison's rates already are among the highest in the country and the requested increase will put a further strain on the City and its residents and businesses and the MTA and its customers. In addition, I will address several specific issues that reduce the need for rate relief. Finally, I will suggest that the Commission consider capping the level of the rate increase so that Con Edison has an appropriate incentive to control its spending.

Summary

Q. Could you please summarize your recommendations?

A. I should first state that I am not presenting a full Cost of Service analysis for any of the three rate years. Rather, I am presenting some specific principles that lead to adjustments. In some cases these adjustments may have interactions with other adjustments or result in income tax consequences that cannot be measured without going through a full analysis. If the adjustments are accepted, DPS Staff would be able to do the necessary calculations.

Given the level of the requested rate increase, the Commission must scrutinize the projected revenue and cost estimates upon which the utility has built its revenue requirement. Based on my analysis, I have identified the following specific adjustments that will reduce the requested revenue requirement, each of which is addressed in more detail below:

1. With respect to sales revenues, I am proposing to reverse the utility's removal of incremental DSM from the forecast, since DSM activity has been built into the forecasting model.

2. For depreciation, I am proposing to remove all negative net salvage from depreciation rates for Electric Plant, and

replace it with a 10 year amortization of these costs after they are incurred, beginning with a RY 1 amortization of $50 million per year.

3. For productivity, I am proposing that three percent of company labor be used rather than the one percent that the utility has included in its forecast.

With respect to my overall recommendation, the unprecedented magnitude of the increase being sought by Con Edison may require the Commission to examine new methods of establishing Con Edison's rates. For example, it may be necessary to adopt an overall rate cap at some reasonable level given the Company's infrastructure needs and compel the Company to manage its operations to that revenue requirement.

Another, and not mutually exclusive alternate, is for the Commission to select an independent auditor to review whether Con Edison has been and is continuing to appropriately spend ratepayer monies. This audit would focus on the Con Edison budgeting process, how it sets priorities and how it manages its own labor forces and its contractors to minimize costs. The audit will not review of how Con Edison designs and operates its system, which

was the subject of several reports prepared by a number of parties, including the City, in the wake of the LIC outage.

Q. How do your proposals affect RY 1, RY 2 and RY 3 revenue requirements?

A. My adjustments reduce the RY 1, RY 2 and RY 3 rate increases by $166 million, $25 million and $23 million, respectively.

Q. Aside from your proposals, does the City support the rest of Con Edison's request?

A. No. We expect DPS Staff as well as other parties to propose additional adjustments that the City and MTA may support. For example, we consider the requested return on equity excessive. In response to City IR 207, Con Edison calculated that if the capital structure and ROR from the Joint Proposal in the Company's current gas case (Case 06-G-1332) that was filed with the Commission on June 1, 2007 is applied to this rate filing the reduction in RY 1 revenue requirement would be about $210 million. I anticipate that my recommended reductions in the overall rate increase will be supplemented by other parties' recommendations, and I encourage

the Commission to adopt any reasonable recommendations to reduce the impact of this enormous rate request.

Context of the Case

Q. Have you prepared a comparison of Con Edison's Electric Rates with other large US electric utilities?

A. Yes, I have relied on a table available from the Department of Energy's Energy Information Administration (EIA) at the following website:

http://www.eia.doe.gov/cneaf/electricity/esr/table6.xls

Q. What information is on this table?

A. This table, which is labeled by EIA as Table 6, shows, for each FERC jurisdictional electric utility, the full service average rates for residential customers taking bundled electric service from their utility. The table I used was based on 2005 data, which is the latest summary data available.

Based on the information on EIA Table 6, I have prepared Exhibit ___ (HA-1), which shows the bundled residential electric rate for the 25 largest electric utilities, in terms of number of bundled

residential customers, as sorted by the average bundled residential rate.

The exhibit also shows the five electric utilities with the highest average bundled residential rate, again as drawn from EIA's Table 6.

Q. What does this table tell us about Con Edison's bundled residential rates?

A. It shows that Con Edison's rates are much higher than other large utilities, and are the fifth highest in the lower 48 states. Importantly, the four utilities that have higher rates are very small, serving a total of 2,500 customers.

Q. Have you made a similar comparison for overall average bundled rates?

A. I tried but was unable to do so. For example, EIA publishes Table 10, which shows, again by utility, the average bundled rate for all customers. However, due to varying degrees of penetration of retail access, this table was not useful. For example, one utility may have most of its largest and lowest paying customers on retail access, while

another may have none, making that first utility's overall average bundled rate higher than the second simply because its lower priced customers were not taking a bundled rate.

Q. Do high existing rates mean that Con Edison's rates are not just and reasonable?

A. Not necessarily. However, the intent of Exhibit ___ (HA-1) is to show that Con Edison's current electric rates, before this proposed rate increase, already place a heavier burden on its customers than the electric rates in other cities, and make it harder for NYC to compete with other areas of the country.

Q. Do you have any comments on the magnitude of the proposed rate increase in this case?

A. Yes. The amounts and percentage increases in the regulated delivery part of the rate are, to my knowledge, unprecedented for large electric utilities in New York State, if not the country. Based on City/MTA Witness Rosenberg's Exhibit ____ (AR-1), Schedule 6, Con Edison's proposed increases in delivery charges for RY 1, RY 2 and RY 3 are 37.7 percent, 7.9 percent and 8.5 percent, respectively.

Compounding these increases, by the end of the three year period, Con Edison's delivery rates would increase by 61.3 percent. The RY 1 increase for NYPA customers is 52.3 percent and by the end of the rate plan the increase to delivery rates for NYPA customers would be 78.4 percent.

Q. What do you see as the factors that are causing a rate request of this magnitude?

A. Con Edison Witness Rasmussen's testimony provides the utility's explanation of the major factors underlying the company's rate request.

This rate increase is being driven first, by the residual impacts of the prior rate plan. There were $250 million dollars of credits used in that plan's Rate Year 3, which is the current rate year ending March 31, 2008. As those credits expire, there is upward pressure on rates.

Another carry forward from the existing rate plan results from the true up of the carrying charges to support the average net plant balances recognized in rates in the prior case and the amount of

carrying charges actually needed to support the actual net plant balances.

Q. Please explain this carry forward.

A. In its last electric rate filing, Con Edison included a large increase in its T&D capital projects. The Commission decided that this request might be unachievable, so it set a lower level for capital projects, about $200 million less that what the Company requested, per year. However, the Commission also took the extraordinary step of permitting the utility to true up the actual carrying charges on the plant so that:

> "The use of a T&D targets subject to reconciliation eliminates any reason the Company may have not to make necessary infrastructure investment." (Commission Opinion in Case 04-E-0572, issued March 24, 2005, page 36)

Q, What was the effect of the Capital Project true-up?

A. Con Edison aggressively exceeded all budget targets, spending far more on capital projects than it originally had requested (let alone what the Commission included in rates). Actual net plant balances

for RYs 1 and 2 have exceeded the amounts reflected in rates by roughly $500 million for each year and the same is expected for RY 3. This means that at the end of RY 3, net plant will be approximately $1.5 billion above what was included in rates from the last case, and almost $1.0 billion more than what the Company requested in its last rate request Because of the true-up, the impact of that aggressive capital spending is a major driver of the rate increase here.

Q. What is the rate impact of the extra capital investment that Con Edison decided to pursue as a result of the last rate Order?

A. Con Edison Witness Rasmussen attributes about $195 million of the $1.225 billion rate increase to this true up. However, the true up actually is responsible for a larger portion of the increase because the $195 million expected balance reflects only the true up in RY 3 of the current plan. According to Con Edison's response to City IR 180, for RY 1 and RY 2 of the current plan the capital investment true up cost ratepayers approximately $60.0 million and $138.7 million, respectively. These costs need not be reflected in the proposed RY 1 because there were ratepayer credits available to offset these charges

in RY 1 and 2. However, because these ratepayer credits are extinguished, their unavailability is contributing to the need for rate relief now.

In sum, the net plant investment true-up from the last rate case is responsible for almost $400 million of the utility's current revenue request.

Q. Is there anything to suggest that the Commission in the last rate case considered the possibility that Con Edison might exceed its own projected spending levels by the extent it has?

A. There is nothing in the Opinion that addresses the possibility that overspending of this magnitude ($1.0 billion more than Con Edison requested; $1.5 billion more than allowed in rates) might occur, and what that might mean for the next rate filing (a $400 million revenue impact). Clearly, the capital investment true-up from the last case demonstrates that regulation by blank check is a very costly, and unwise, approach. While the utility will argue that service reliability is improved as a result of its aggressive capital spending, the performance statistics for SAIDI and CAIDI for 2006, which reflect the LIC event, provide no support for such a claim.

Q. What other factors are contributing to the need for a rate increase?

A. Despite investing almost $1.5 billion in extra capital projects during the current rate plan, Con Edison plans to significantly increase its level of capital investment during the next three years. In fact, as set forth in more detail below, the Company increased its Annual Capital Budgets for each of the three years in the proposed rate plan by $500 million from March to May, 2007, or by almost 40 percent.

The exhibits presented by the Con Edison Accounting Panel show that from 2003 to the twelve months ending March 31, 2011, RY 3 of the proposed plan, the Book Cost of Plant is expected to nearly double, and O&M spending other than Fuel will more than double. This is an unprecedented level of projected spending that, as demonstrated by the Company's current rate filing, has a devastating impact on rates.

The utility's requests for a higher return on equity, for higher depreciation rates and for an amortization of a deficiency in the reserve for depreciation are also important contributors to the Company's proposed increase.

Q. Do you have any general recommendations for how the Commission should approach this rate proceeding?

A. The Commission always examines a utility's rate request for ways to mitigate the impacts of rate increases on customers, but given the current level of Con Edison rates and the magnitude of the proposed increase, the Commission should be particularly assertive in reviewing this request. Specifically, the Commission should carefully examine each claimed expense and revenue line item to determine whether the Company is overstating its costs or understating its revenues. In addition, Con Edison's cost control incentives under the current legal and regulatory environment are weak. Clearly, the open-ended Capital projects true-up mechanism from the last rate case must be discarded. Instead, as I explain in more detail below, in order to achieve a balance between the Company's desires and its customers' ability to pay ever-increasing rates, the Commission may have to force the Company to manage its capital and O&M investments to a predetermined, acceptable level.

Revenues

Q. Have your reviewed the revenues, sales and sendout forecast for the three rate years?

A. Yes.

Q. Do you have any adjustments to these forecasts?

A. I propose to reverse the utility's adjustment to these forecasts to remove the future impact of DSM. I consider these adjustments a double count of the impact of DSM. DSM impacts are in the historic results, cannot be readily removed, and are impacting the models and negatively influencing the forecasts.

According to Con Edison's response to City IR 209, the adjustments to the sales and revenue forecasts were:

	GWH	Impact on Rev. Requirement
RY 1	512	$25.5 Million
RY 2	840	$42.4 Million ($16.9 incremental)
RY 3	1,158	$58.4 Million ($16.0 incremental)

Q. Please explain the basis for your adjustment.

A. DSM has been a technology that has long impacted the consumption of electricity within the Con Edison service territory. Con Edison's Save a Watt began around 1972, and has continued in one form or another for 35 years. Because the historic level of sales reflects the actual results of the DSM investment, so must the model results. Moreover, because DSM has dampened sales over time, the effect of the sales models is to dampen the coefficients for the model's independent variables that are growing over time (i.e. price, employment, number of customers) and/or, reduce the value of the constant, all of which would dampen the forecasts.

Con Edison's proposed treatment of DSM in its sales forecast, which reduces the forecast, can be contrasted with its treatment of other factors which would work in the other direction. For example, residential customers have been adding room air conditioners, and, like DSM, there is no independent variable that deals with appliance saturation. Con Edison's logic for dealing with DSM, if applied to room air conditioners, would mean we would have to increase the sales forecast for every room air conditioner we expect to be installed during the rate plan. However, Con Edison does not propose any such countervailing adjustments to its sales forecast.

Q. Have you prepared an example that illustrates the effect that DSM can have on the models?

A. Yes, Exhibit ____ (HA-2) compares three sendout models and the RY 1 resulting forecast.

Rather than use the Con Edison sendout model for this illustration, to simplify the example, I have used a linear regression model with the same independent variables as the company, but I eliminated the dummy variable and the Arima portion of the Con Edison model.

The first set of coefficients was derived as a Base Case with the actual sendout data and the model inputs both as provided by Con Edison in response to City IR 60.

The second and third sets of coefficients were derived by using an increased sendout that represents removing an assuming level of DSM, thus increasing sendout. For the second set, the Fixed DSM Case, I assumed a compound growth rate in DSM of 0.2 percent per year. Comparing the coefficients in this example, the only change is to the constant, which is consistent with this Fixed DSM Case scenario because the DSM upward adjustment had a

constant impact on the sendout. The constant becomes less negative, which will result in a higher sales forecast using the same set of inputs.

The third set of coefficients was derived by assuming a variable impact of DSM, I assumed 0.1 percent through 1990 and 0.3 percent thereafter, again compounded annually. As can be seen, because of the variable assumption on DSM, the coefficients of the price, employment and number of customers change considerably, as well as a change to the constant.

Exhibit ____ (HA-2) also shows the growth rate in sendout for RY 1 over the projection from each of these three models. The three models have growth rates of 1.26 percent in the base case, 1.47 percent for the Fixed DSM Case and 1.56 percent for the Variable DSM Case.

The change in the growth rate in these three cases is further evidence that, because of the impacts on the coefficients that are in the model, the forward looking forecasts will change the growth rate in sendout due to the historic impact of DSM.

Q. Is it your position that any of your illustrative models should be used to establish revenue, sales, or sendout forecasts for this proceeding?

A. No. These models were prepared only to show the type of impact that an assumed level of historic DSM has on the projections. There is no concrete estimate of the historic impacts of DSM, so even if I wanted to, I could not develop a scenario that would begin with what sendout might have been if DSM had not been state policy.

Q. Are there any circumstances where an adjustment for proposed DSM forecasts would be appropriate?

A. Yes, it is conceivable. The utility would have to show that DSM is being stepped up beyond anything that could be in the forecast. For example, if legislation were passed that all incandescent bulbs had to be replaced with fluorescents, such a mandate might have an impact on consumption that went well beyond what is in the historic data. However, even in such a case, not all projected DSM should be removed, only the impact of this large change in policy. Utility Witness Craft is proposing a new DSM program, but DSM programs have been in place. The utility has failed to meet its burden of proof

that the changes in DSM are so unusual that they require discrete adjustments in the sales forecast equivalent to the full amount of the investment.

Q. Does Con Edison's new DSM program justify the utility's decision to adjust the sales forecast to remove the future impact of DSM?

A. No.

Depreciation

Q. Have you reviewed the utility's proposed depreciation rates?

A. Yes. Con Edison is proposing depreciation rates that add about $100 million to the RY 1 revenue requirement, $58 million in higher depreciation rates and $42 million in an amortization of the deficiency in the actual depreciation reserve as compared to the theoretical reserve.

Q. Do you have any comments on the utility position?

A. Yes, I am proposing that negative net salvage no longer be reflected in depreciation rates for electric plant. Rather, negative net salvage

should be recovered using a ten year rolling average. This adjustment eliminates a $42 million revenue requirement impact that was attributable to amortization of the deficiency.

In addition, substituting my recommended amortization of negative net salvage over ten years for the current depreciation rate recovery further reduces RY 1 revenue requirement by an additional $78 million.

I will not be addressing other aspects of depreciation, but the City may support proposals for changes sponsored by other parties.

Q. Do other jurisdictions exclude negative net salvage from depreciation rates?

A. According to Con Edison's response to City IR 129, New Jersey and Pennsylvania do not allow negative net salvage in depreciation. In addition, for Con Edison's Gas Department, mains have a hybrid treatment with a cap in the depreciation rates and amounts above the cap being expensed.

Q. What is negative net salvage?

A. When a depreciable asset is retired there is a cost of removal and a potential salvage value. A negative net salvage indicates that the net of these two was an out of pocket cost to the utility.

Q. How has negative net salvage been recovered for the Con Edison electric system?

A. The utility has built negative net salvage into depreciation rates along with the original cost of the asset. By doing so, ratepayers who are served by that item of plant are said to contribute to the full cost associated with that asset incurred both before it enters service and after that asset is retired. This argument is referred to as one of intergenerational equity in that the single generation of ratepayers served by an asset is paying all the costs to support that asset.

Q. Do you agree with recovering negative net salvage in depreciation rates on this basis?

A. No. There are several reasons why this approach is not justifiable.

First, in the case of an electric utility, the negative net salvage is almost always incurred to allow the installation of a new asset to serve the greater needs of the future ratepayers.

Second, including negative net salvage in depreciation rates for long lived assets requires the Commission to predict removal costs far into the future.

Third, the current approach to depreciation penalizes ratepayers in the early years of an asset's life and adding net salvage makes the penalties even higher.

Fourth, prepaying in a situation where plant balances are growing rapidly can be a losing situation for ratepayers.

Q. Could you explain why negative net salvage can be considered as part of the costs of future assets rather than a cost of providing service to current ratepayers?

A. The current Con Edison practice is akin to requiring homeowners to cover through their mortgage payments the eventual demolition of their new house when it becomes inadequate for the needs of the then current owners.

Con Edison's facilities may become inadequate for the needs of future ratepayers, they may become technologically obsolete, they may simply fail, but they will almost always be replaced by new facilities.

An example of this can be seen in Account 9514, which has a theoretical reserve of $30.3 million and an actual reserve of negative $77.2 million, creating a reserve deficiency of over $107 million for this single account. The reserve for this account was charged with substantial costs of removal in gutting parts of the East River Station to accommodate the new ERRP.

Con Edison has removed these amounts from its analysis of the appropriate level of net negative salvage for this account, recognizing that this is not a usual circumstance, but this account is contributing to the reserve deficiency.

Pre-funding negative net salvage only makes sense if the asset has to be removed and the space it occupied cannot be used. I am not aware of such circumstances affecting any significant portion of Con Edison assets and, if they exist, they should be demonstrated on a case-by-case basis, instead of assuming that all of the assets are so afflicted.

Q. Could you explain your second objection for eliminating negative net salvage from depreciation rates?

A. Depreciation of the original cost of a facility involves the recovery of a known cost. Net salvage must be estimated. With long lived assets, these estimates become little more than proxy values that might bear little relationship to the eventual costs.

For example, one of the larger accounts, PSC No. 366, Distribution Underground Conduits, has an average service life of 80 years and a book and proposed net salvage of negative 20 percent and negative 40 percent, respectively. Conduits going into service during this rate plan are expected to be in service, on average, until, about 2090. Charging today's ratepayers based on a forecast of the removal costs of conduits that far out in the future is hard to defend.

Q. Could you explain why the current approach to depreciation penalizes ratepayers in the early years of a project's life?

A. Yes, Schedule 1 of Exhibit ___ (HA-3) shows the annual revenue requirement needed to support a single day 1 investment of $100 having a 20 year life and a 20% negative net salvage. The revenue requirement is based on the utility's requested pre-tax cost of capital and a 5 percent discount rate.

On Exhibit ____ (HA-3), I have shown the revenue requirement calculated four ways. Column (1) shows year by year revenue requirements using the current Con Edison approach. Negative net salvage is recovered over the life of the asset and a return is earned on the average net plant each year. As can be seen from this column, the ratepayers in the earlier years pay far more than ratepayers in the later years. That occurs because in addition to depreciation, the customers in the early years have to provide a return on the nearly undepreciated plant investment, while in the later years the plant will be nearly fully depreciated.

The situation is even worse when it is recognized that the ratepayers in these later years will be paying their revenue requirements with nominal dollars that are worth less than the nominal dollars paid by ratepayers in the early years.

Column (2) shows the annual revenue requirement, with negative net salvage recovered over the life of the asset, but with the revenue requirement set so that it is equal in real terms over the life of this investment. This is a fairer way of charging customers for using an asset over time.

Columns (3) and (4) are similar but they are based on recovering negative net salvage from ratepayers at the time of retirement as a one time charge.

If Column (2) clearly is the fairest method, and the inclusion of negative net salvage is the least attractive of the three other approaches.

Q. Isn't it true that Schedule 1 of Exhibit ____ (HA-3) shows that the Nominal and Net Present Value of the revenue requirements are lower if negative net salvage is included in depreciation rates?

A. Yes. So long as the utility pre-tax cost of capital is higher than the discount rate, calculations like these will generally show that the ratepayer is worse off whenever the utility has an opportunity to earn a return on its investment. If the only goal were to minimize the payments to the utility, the solution would be to have ratepayers fund all utility facilities on a pay as you go basis.

Aside from the equity issue of charging customer, their fair share of the cost of an asset, depreciation is all about the timing of the recovery of costs: ratepayers can pay it sooner and avoid the utility's carrying charges or they can pay it later, and incur these costs.

Q. Schedule 1 of Exhibit ___ (HA-3) reflects a one time investment. Because the timing of recovery is really the issue here, have you prepared any examples where plant additions are continuous?

A. Yes, Schedule 2 and Schedule 3 of Exhibit ___ (HA-3) both show the results using four alternative means of recovering costs. Unlike Schedule 1, for Column (3) and Column (4) of these two schedules I amortized negative net salvage over the ten years after they were incurred.

Otherwise, these two schedules used many of the same assumptions as in Schedule 1. However, I began with an initial investment of $100 on day one, and added plant every January 1 for the next 40 years, with retirement of that plant happening December 31, 20 years later. To show a "steady state" result, these two schedules only show the revenue requirements for years 21 to 40, when plant is being added and retired each year.

For Schedule 2, I assumed a 3 percent growth in the annual investment. For Schedule 3, I used a 14 percent growth rate, which is more like the situation we are now in, although that is not why I selected 14 percent for Schedule 3.

I selected 14 percent as a growth rate because I wanted to show that in a case where plant balances are growing rapidly over many years, the general rule that the ratepayer pays a lower net present values by pre-funding negative net salvage does not apply. In such a case, the "early year" penalty is sufficient to offset the benefit of the reduced rate base due to the prepayments. The 14 percent growth rate was the lowest whole number percentage that, under the assumptions used on Schedule 3, showed that the net present value of revenue requirements for the 20 year window was lower with negative net salvage amortized over ten years after it was incurred than it was with the current utility treatment of recovering negative net salvage in depreciation rates over the assets life.

Schedule 3 is the basis of my fourth objection to the utility's current treatment of negative net salvage.

Q. Have you prepared an exhibit that shows the impact on depreciation of eliminating negative net salvage?

A. Yes, I have prepared Exhibit ___ (HA-4). This exhibit is modeled after Exhibit 25, but eliminates the impact of negative net salvage on Electric Plant, leaving Common Plant as per Exhibit 25, since the

change there would be minor and would impact other Con Edison Departments.

Q. What does your proposal do to the annual depreciation rates?

A. As shown on Exhibit ___ (HA-4), using the utility proposed basis, but eliminating the impact of negative net salvage reduces depreciation rates by 27.9 percent, or $110,114,632 based on the book cost as of December 31, 2006. That would be equivalent to a RY 1 impact of about $127 million. This higher figure was developed by reducing the depreciation on the three components of Electric Plant by 27.9 percent (Company Witness Rasmussen's Exhibit 24, Schedule 5). The corresponding incremental amounts for RY 2 and RY 3 are $12 million and $15 million, respectively, and are also drawn from Exhibit 24, Schedule 5 by applying a 27.9 percent reduction.

Q. What does the Exhibit ____ (HA-4) show regarding the deficiency in the depreciation reserve?

A. Using the utility-proposed basis, there is now a surplus of 8.93 percent in the actual versus theoretical depreciation reserve, as

opposed to a deficiency of 16.46 percent on Exhibit 25. This is within the normal level of tolerance so an amortization is not required, reducing the RY 1 revenue requirement by $42 million.

However, I have not examined the proposed depreciation basis in sufficient detail to propose my own adjustments, and to the extent adjustments proposed by other parties to the service lives or life-tables are supportable, there may be a surplus that is above 10 percent requiring an amortization of that surplus. Amortizing the surplus over 15 years would further reduce RY 1 revenue requirements by about $20-25 million.

Q. How would you recover negative net salvage?

A. I am proposing a ten year amortization of the actual cost of negative net salvage after it is incurred.

Q. How would you transition from the current system to your proposal?

A. Negative net salvage on plant retired before my proposal would be implemented in RY 1 is charged to the depreciation reserve. Therefore, there will be no starting balance in negative net salvage to

be amortized. Nonetheless, there should be an amount reflected in rates for RY 1.

Q. How would you set the amount in rates?

A. I have prepared Exhibit ___ (HA-5) which shows the five and ten year average level of net salvage for Con Edison's Electric Plant as drawn from Exhibit 27. These amounts are $118 million and $93 million, respectively. If we select an annual level of $100 million as an expected level for RY 1, and recognize that the retirements will occur throughout the year, a ten year amortization of these values would result in a cost of $5 million for RY 1.

Q. Is that your recommended rate allowance for RY 1?

A. No, setting such a low allowance would contribute to a need for future rate increases. If it is accepted that future annual negative net salvage costs will be in the order of $100 million, setting an allowance for RY 1 and, if applicable, RY 2 and RY 3 more in the order of $50 million would avoid the need for a rate increase in the next rate plan as well as the one after that.

I have prepared Exhibit ___ (HA-6) to show these calculations. This exhibit ignores escalation in the negative net salvage, if there is any, as well as the impact of a rate base offset or interest accrual for the surplus in the amortization account.

As shown on this exhibit, for the rate plan beginning April 2014, there would be a positive balance in the Amortization Account. It is only in the plan after that, beginning in April 2017, where the $50 million would have to be adjusted upwards.

The rate allowance of $50 million can be adjusted in subsequent rate plans as the actual net salvages become known.

Q. What are the net rate impacts of your proposed treatment of negative net salvage?

A. To sum them up, the elimination of the reserve deficiency reduces the RY 1 revenue requirement by about $42 million, and the elimination of negative net salvage reduces it by about another $127 million. The creation of an amortization of $50 million offsets these two, so that the net adjustment to depreciative expense is approximately $120 million in RY 1, $12 million in RY 2 and $16 million in RY 3.

A further offset would also occur because lowering depreciation lowers the depreciation reserve, increasing rate base. Assuming a 12.2 pretax cost of capital, the RY 1 adjustment is $119 million, the increment for RY 2 is an increase of $5 million, and the increment for RY 3 is a further increase of $3 million.

As stated previously, if there are other adjustments made to the depreciation rates, an amortization of the surplus in the deprecation reserve might further reduce the RY 1 revenue requirement by another $20 to $25 million.

There may be federal and state income tax implications as well, but I would have to rely on DPS Staff to provide that information.

Productivity

Q. What productivity is reflected in the utility's rate filing?

A. In Exhibit 5, the utility has identified a single program, the Advanced Metering Initiative, as having an expected productivity improvements of $1.9 million in RY 1.

In addition, the utility has built into its forecasts for the three year rate plan the Commission's traditional general productivity

adjustment of one percent of company labor for each of the three years, worth $10.4 million for RY 1.

It should be noted that while the one percent is measured against company labor, it is expected to encompass all sources of productivity.

Q. Do you believe that the productivity levels reflected in the rate plan are adequate?

A. No. The one percent level does not reflect the extraordinary levels of new capital projects and O&M programs that the utility has undertaken over the past few years and is proposing to continue and expand for the new rate plan.

Q. Have you reviewed these capital projects and O&M programs for their potential to increase productivity?

A. Yes, this review was conducted as a team effort that included myself and two other consultants to the City, Richard Peck P.E., who retired from Con Edison as the Manager, Manhattan Operations, after 34 years of experience with the utility and Ralph Mauro, P.E. who retired from Con Edison as a Department Manager after 33 years of

experience with the utility. Our detailed review covered only programs and projects presented by Con Edison's Infrastructure Investment Panel (IIP), but we believe that other Company witnesses have proposed projects and programs that also will enable the utility to achieve higher levels of productivity.

Q. Have you prepared an exhibit showing the results of this team's review of the potential for productivity gains for capital projects and O&M programs sponsored by the IIP?

A. Yes, our team has prepared Exhibit ___ (HA-7), and I am sponsoring that exhibit. This exhibit presents the IIP capital projects and programs in the same major groupings as the utility presented them. We then sorted these capital projects by the amount of dollars to be spent in 2008. Next, we indicated whether the project presented a productivity opportunity for the utility based on the utility testimony, the utility responses to IRs and our own knowledge of the system. The last column gives a brief description of the productivity improvement.

This exhibit also addresses all IIP O&M Programs in the same way except these O&M costs were sorted by spending in RY 1, which is how the costs were reported by the utility.

Exhibit ___ (HA-7) shows that IIP sponsored capital projects of over $200 million for each of the three years provide the utility with the opportunity to achieve productivity savings. Further, the IIP sponsored O&M programs, which also provide an opportunity to achieve productivity saving, average about $57 million per year for the three rate years.

The utility has full blown planning and support organizations in place to further enhance its operating groups including Environment, Health and Safety (EH&S), Quality Assurance (QA), Auditing, Energy Management, System Operation, Emergency Management, etc. All of these organizations provide a high level of support that should insure the high level of operating efficiency from the utility's line organizations.

Individual operating groups have teams of assigned planners, project managers and full time work and feeder outage schedulers. These layers of trained support organizations are designed to insure that the utility drives out inefficiencies and shares new operating and

technological enhancements across the entire corporation in an effective manner.

Q. Can you cite to any specific examples of programs that should increase productivity?

A. There are numerous examples of a system wide investment pattern in new technology, process improvement, and system betterment efforts that are designed to contribute towards significant operational productivity improvements.

The following limited examples from Con Edison's testimony highlight programs that should provide significant productivity gains:

- Remote Monitoring System – the program to replace defective or non-reporting RMS transmitters to reach the targeted 95% minimum reporting rate, in conjunction with the acceleration of the deployment of the newer third generation transmitters that provide additional operational parameters (transformer oil tank level, tank pressure, and oil temperature), will provide significant operation productivity savings. A fully functional, and enhanced, system will provide near real-time information about transformer operating parameters that will enable Company personnel and

control room operators to make informed decisions about the current and projected operating condition of its network transformers. This information will improve the operating effectiveness of the Engineering Analysis and their resultant prioritization and deployment of their Emergency Response personnel.

- Edison Program (i.e.: Integrated System Model, Decision Aids, and Grid Optimization programs) -- these three program components are being funded to develop operational innovation through the deployment of adaptive business intelligence software that is focused on managing business risks and driving out inefficiencies through the use of Computer Aided Lean Management (CALM) methodology. Each of these three components will make significant contributions to the operational efficiency and productivity of the Con Edison workforce and provides estimated minimum Return on Investment of between 5:1 and 3:1 for the various components of this umbrella project. This major technology project demonstrates the capability of Con Edison to reap huge benefits from this and similar technological projects that significantly enhance its data management, decision

making, asset management, process improvement, and automation capabilities.

- Electric Mobile Dispatch -- is intended to automate the real-time process of dispatching Con Edison's workforce on a scheduled as well as an emergent or emergency basis via a wireless communication system that transmits work orders directly to the crew vehicles. In addition, work progress and completion data is directly captured and a GPS tracking capability is included. Significant work crew productivity will be provided as this tool is deployed throughout the entire workforce. For example, this investment should yield a substantial reduction in their current clerical support workforce.
- Equipment Modernization – there are numerous projects listed throughout the Con Edison filing wherein it plans to upgrade and modernize various operational equipment (i.e.: Obsolete 138kV Circuit Breakers, Pumping Plant Improvements, Replace Disconnect Switches, ESCO Switch Replacements (Kyle), Obsolete Circuit Breaker Replacements, etc.) intended to address aging or obsolescence issues but which all have significant further operational benefits. Specifically, the newer, modern

equipment is easier to operate, utilizes less parts, provides additional operating information both locally and remotely, often provides automation driven reductions in operating time frames, and may indeed provide remote control and indication.

Q. What is the cumulative impact of your team analysis?

A. Past and planned investments by Con Edison will provide an improvement in operation decision making, better management of the available human resources, and productivity enhancements. The productivity reflected in the Company's filing does not fairly reflect the unprecedented spending that the Company has made over the past three rate years, and plans to make in the next three rate years. Accordingly, I am recommending that the productivity adjustment be increased to three percent of company labor per year, an additional adjustment of $20.8 million for RY 1. Based on Exhibit 24, Schedule 4, Page 1, the three percent productivity adjustment would be $11.4 and $11.7 million for RY 2 and RY 3, respectively.

Capital Projects and O&M

Q. Are you proposing any specific adjustment to any capital projects or O&M projects?

A. No. It is difficult to tell the Company how it should prioritize these projects. In the event that other parties make such recommendations, however, the City and MTA may support these adjustments.

Q. How would you recommend that the Commission address the unparalleled Capital and O&M budgets that Con Edison has requested?

A. As noted earlier, I have proposed a number of specific adjustments to the proposed revenue requirement. Other parties are likely to propose equally valid adjustments. However, if the accepted adjustments are insufficient to reduce the increase to levels that are acceptable to the Commission because of customer impacts, I am recommending that the Commission consider placing a cap on the rate increase and leave it to Con Edison to determine which of its capital projects and O&M programs should be allowed to proceed under that cap. If the cap is established, Con Edison should be required to report to the Commission the extent to which individual projects will be deferred,

will have the scope curtailed, or will have its implementation time frame extended.

In order to ensure that critical programs are not deferred due to the cap, if during the term of the rate year or rate plan, the utility finds that there is a specific capital project or O&M program that is needed to ensure sale and reliable service but was either not contemplated, or was contemplated but on a substantially smaller scale, or it is being introduced in response to a Commission order or other mandate, then it can petition the Commission for deferred cost recovery of that specific capital project or O&M program.

Q. Why are you recommending a capping approach to Capital and O&M Projects?

A. Under the current regulatory and legal environment, a utility has an incentive to add as many possible capital projects and as many O&M programs as the Commission will allow it to recover in rates. Indeed, the capital investment true-up mechanism from the last Con Edison rate case demonstrates just how strong this incentive can be, and how difficult the associated rate impacts are.

It is very difficult for interveners, and even DPS Staff, to analyze a utility's Capital and O&M budgets and recommend elimination or deferral of specific projects. However, it is the Commission's job to ensure that there is a proper balance between utility spending and customer interests.

Q. Does your recommendation represent a return to "command and control" regulation?

A. Only to a limited extent. The Company will retain the ability to determine which capital and O&M projects should be implemented, and in what priority. And, the utility can seek relief from the cap under certain circumstances. However, it is clear to me that a different approach to managing these investments is necessary.

Q. Please continue.

A. It has long been recognized that a utility has an incentive to invest in plant because it is a way to grow the utility's earnings, assuming the PSC allows what the utility views as a reasonable return. Traditional regulation relied on regulatory lag to provide the utility a counter-incentive to control capital spending to offset this incentive to spend,

but that counter-incentive was removed by the full true-up of the carrying charges on net plant balances that was introduced in the last rate case. Moreover, investing as much as possible in utility infrastructure may be one way to protect stockholders against lawsuits, regardless of whether those investments are cost effective for the customers who have to fund them.

Q. The utility has proposed not to continue the full true up on net plant balances. Does this correct the balance of incentives?

A. No. The utility proposal is to discontinue the true up only if its full capital plan is accepted by the Commission, a somewhat unlikely outcome, given the magnitude of the filing and the amount of discovery conducted by the parties. However, if the full capital budget is approved, the utility would still have a strong incentive to spend its allowance.

Q. Are you saying that Con Edison's rate filing does not properly balance safe and adequate service with just and reasonable rates?

A. It appears that is the case. For example, there is little evidence that the costs in the rate filing have gone through the scrutiny that would

be applied to a budget for a competitive firm, or even a government entity.

For example, in response to the Commission's proceeding on the LIC outage, on March 8, 2007, less than two months before the rate case was filed, Con Edison submitted a five year capital budget that was about $500 million lower for each of 2008, 2009 and 2010 than the capital budget that Con Edison included in the rate filing. Con Edison's rate filing contained no explanation for this nearly 40 percent increase. In response to DPS IR 313, Con Edison did provide a reconciliation of the two budgets, but the magnitude of the changes over less than a two month period does little to instill confidence that the rate filing is little more than a wish list.

Moreover, neither the March 8 capital budget nor the rate plan budget was approved by the utility's board. In short, there is simply no evidence that any attempt was made by the utility to minimize the impacts of its Capital and O&M budgets on rate levels.

Q. Isn't safe and adequate service vital to Con Edison's customers?

A. Yes, especially in a densely populated area that is highly dependent on its electric infrastructure. But there are many other critical

services provided by government, such as police, fire, schools, mass transit, roads and highways, garbage collection, water supply, national defense and so on. These governmental services are funded directly through tax dollars or through usage charges (for example, subway fares and tolls).

However, even for critical services there has to be an analysis of how to provide those services in the most cost-effective way. There is a point at which the incremental cost of providing a service is greater than the incremental benefit of receiving it. For example, just as it would not be rational for there to be a firehouse at every corner, there should not be a utility worker stationed at every manhole. In the case of a government entity, the government must select the funding levels and the actual programs, in effect balancing safe and reliable service with the just and reasonable rates for each of these public services.

Q. What are the implications for establishing Con Edison's Capital and O&M budgets?

A. Here, the situation is somewhat different, because, unlike the case of governmental entities, the government, through the Commission, can

allow or disallow specific programs, or choose only to set some priorities. In my judgment, decisions about exactly how to best manage the system should be left to the utility that actually operates the system.

However, where, as here, the utility has not demonstrated the ability to properly balance customer interests, the Commission cannot stand idly by. If the utility does not give adequate weight to the rate impacts of its pending on capital projects and O&M programs, then Commission must step in and set limits on the costs ratepayers should bear. That is why I am recommending that the open-ended true-up mechanism from the last case be discarded and that, in its stead, the Commission establish a Capital and O&M cap that, subject to limited adjustments that may be allowed by the Commission in response to specific petitions from the utility, will result in a rate increase that fairly balances safe and reliable service with just and reasonable rates.

A second, and not mutually exclusive option, would be for the Commission to have an audit performed on Con Edison to ensure that ratepayers have been and are getting their money's worth. This audit would focus on Con Edison budgeting process, how it sets

priorities and how it manages its own labor forces and its contractors to minimize costs, as opposed to a full review of how it designs and operates its system. The latter subject, of course, was the subject of several reports prepared by a number of parties, including the City, in the wake of the LIC outage.

Q. Do you have an exhibit which contains the interrogatories responses you wish to offer as evidence?

A. Yes, I have prepared Exhibit ____ (HA-8) for this purpose.

Q. Does this conclude your testimony?

A. Yes.

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Exhibit ____ (HA-1)

Consolidated Edison Company of New York, Inc
Case 07-0-523
Comparison of Bundled Residential Price
Source: Energy Information Administration Table 6 for 2005

Largest 25 Utilities in Terms of Residential Customers Served Sorted by Bundled Residential Price

Entity	State	Class of Ownership	Number of Consumers	Revenue	Sales	Average Price
Consolidated Edison Co-NY Inc	NY	Investor Owned	2,625,628	2,884,096	13,689,872	21.07
San Diego Gas & Electric Co	CA	Investor Owned	1,179,446	1,046,342	7,075,368	14.79
Connecticut Light & Power Co	CT	Investor Owned	1,051,410	1,419,259	10,423,723	13.62
PECO Energy Co	PA	Investor Owned	1,357,788	1,704,624	13,134,981	12.98
Pacific Gas & Electric Co	CA	Investor Owned	4,388,140	3,833,096	29,683,580	12.91
Southern California Edison Co	CA	Investor Owned	4,098,559	3,695,288	28,711,485	12.87
Niagara Mohawk Power Corp	NY	Investor Owned	1,349,917	1,369,054	10,749,792	12.74
Massachusetts Electric Co	MA	Investor Owned	1,067,996	1,098,720	8,701,659	12.63
Reliant Energy Retail Services	TX	Power Marketer	1,645,991	3,020,353	24,451,345	12.35
Public Service Elec & Gas Co	NJ	Investor Owned	1,801,259	1,643,736	14,032,021	11.71
TXU Energy Retail Co LP	TX	Power Marketer	1,948,006	3,720,873	32,021,757	11.62
Los Angeles City of	CA	Public	1,237,129	724,748	7,105,500	10.20
Progress Energy Florida Inc	FL	Investor Owned	1,397,013	2,000,607	19,893,534	10.06
Florida Power & Light Company	FL	Investor Owned	3,828,375	5,215,709	54,179,849	9.63
Public Service Co of Colorado	CO	Investor Owned	1,086,358	760,920	8,389,592	9.07
PPL Electric Utilities Corp	PA	Investor Owned	1,188,469	1,267,386	14,225,944	8.91
Detroit Edison Co	MI	Investor Owned	1,977,013	1,452,113	16,811,958	8.64
Commonwealth Edison Co	IL	Investor Owned	3,344,609	2,583,442	30,042,519	8.60
Northern States Power Co	MN	Investor Owned	1,046,673	760,095	8,841,946	8.60
Georgia Power Co	GA	Investor Owned	1,817,912	2,024,204	23,585,116	8.58
Virginia Electric & Power Co	VA	Investor Owned	1,937,806	2,381,261	28,267,645	8.42
Alabama Power Co	AL	Investor Owned	1,177,707	1,476,211	18,073,783	8.17
Consumers Energy Company	MI	Investor Owned	1,558,388	1,069,386	13,286,010	8.05
Duke Energy Corporation	NC	Investor Owned	1,476,590	1,553,553	20,005,546	7.77
Baltimore Gas & Electric Co	MD	Investor Owned	1,079,043	1,066,503	13,759,809	7.75
Six Utilities with the Highest Residential Bundled Rates in the Lower 48						
Matinicus Plantation Elec Co	ME	Public	117	79	148	53.38
Block Island Power Co	RI	Investor Owned	1,290	1,564	4,328	36.14
Swans Island Electric Coop Inc	ME	Cooperative	494	511	1,887	27.08
Fishers Island Utility Co Inc	NY	Investor Owned	643	1,097	4,094	26.80
Fox Islands Electric Coop, Inc	ME	Cooperative	1,603	1,548	6,734	22.99
Consolidated Edison Co-NY Inc	NY	Investor Owned	2,625,628	2,884,096	13,689,872	21.07

Exhibit ____ (HA-2)

Consolidated Edison Company of New York, Inc
Case 07-0-523
Illustration of the Impact of DSM on the Sendout Forecast
Without Arima or Dummy Variable

Coefficients	Base Case Model uses Actual Sendout	SO Adjusted up for DSM by 0.2 percent Compounded Annually	Percent Change from Base Case	SO Adjusted up for DSM to 1990 by 0.1% 1991 to 2006 by 0.3% Compounded Annually	Percent Change from Base Case
DLOGEmp*NC09	0.27043	0.27043	0%	0.25218	-6.75%
DLOG Price	-0.04790	-0.04790	0%	-0.04552	-4.97%
LEAPY	0.01338	0.01338	0%	0.01336	-0.17%
HDD	3.74E-05	3.74E-05	0%	3.73E-05	-0.31%
CDD24	9.06E-05	9.06E-05	0%	9.03E-05	-0.29%
CDD	5.60E-05	5.60E-05	0%	5.58E-05	-0.35%
C	-1.28816	-1.28729	-0.07%	-1.28461	-0.28%
SO for RY 1	62,766	66,705	6.28%	67,201	7.07%
SO increase over RY ending 3/31/08	1.26%	1.47%		1.52%	

Exhibit ___ (HA-3)
Schedule 1

Con Edison Electric Rate Case 07-E-0523
Annual Revenue Requirment of $100 Plant Addition
Single Investment Day 1

Investment Day 1	$	100
Discount Rate		5.00%
Cost of Capital		8.53%
Weighted Cost of Equity		5.60%
Effective Cost of Equity		9.27%
Effective Cost of Capital		12.20%
Negative Net Salvage		20.00%
Average Life - years		20
Depreciation Rate with Salvage		6.00%
Depreciation Rate w/o Salvage		5.00%

Year	Rev. Req. Neg Salvage Recovered over Life		Rev. Req. w Neg Salvage Paid at Retirement	
	Nominal	Constant NPV	Nominal	Constant NPV
	(1)	(2)	(3)	(4)
1	$17.84	$7.88	$16.90	$8.28
2	$17.11	$8.28	$16.29	$8.70
3	$16.37	$8.69	$15.68	$9.13
4	$15.64	$9.13	$15.07	$9.59
5	$14.91	$9.58	$14.46	$10.07
6	$14.18	$10.06	$13.85	$10.57
7	$13.44	$10.57	$13.24	$11.10
8	$12.71	$11.09	$12.63	$11.65
9	$11.98	$11.65	$12.02	$12.24
10	$11.25	$12.23	$11.41	$12.85
11	$10.52	$12.84	$10.80	$13.49
12	$9.78	$13.49	$10.19	$14.16
13	$9.05	$14.16	$9.58	$14.87
14	$8.32	$14.87	$8.97	$15.62
15	$7.59	$15.61	$8.36	$16.40
16	$6.85	$16.39	$7.75	$17.22
17	$6.12	$17.21	$7.14	$18.08
18	$5.39	$18.07	$6.53	$18.98
19	$4.66	$18.98	$5.92	$19.93
20	$3.93	$19.92	$25.31	$20.93
TOTALS				
Nominal	$217.63	$260.71	$242.04	$273.83
NPV	$157.69	$157.69	$165.63	$165.63

Exhibit ___ (HA-3)
Schedule 2

Con Edison Electric Rate Case 07-E-0523
Revenue Requirement with Plant Investment Growing at 3% per year
Investment Day 1
Last 20 Years

Investment Day 1	$	100
Annual Growth Rate in Investment		3.00%
Discount Rate		5.00%
Cost of Capital		8.53%
Weighted Cost of Equity		5.60%
Effective Cost of Equity		9.27%
Effective Cost of Capital		12.20%
Negative Net Salvage		20.00%
Average Life - years		20
Depreciation Rate with Salvage		6.00%
Depreciation Rate w/o Salvage		5.00%

Year	Rev. Req. Neg Salvage Recovered over Life		Rev. Req. w Neg Salvage Amortized over 10 years	
	Nominal	Constant NPV	Nominal	Constant NPV
	(1)	(2)	(3)	(4)
21	$318	$271	$328	$297
22	$329	$285	$343	$312
23	$339	$299	$358	$328
24	$350	$314	$373	$344
25	$361	$330	$389	$361
26	$373	$346	$406	$379
27	$385	$364	$423	$398
28	$397	$382	$440	$418
29	$410	$401	$458	$439
30	$423	$421	$473	$461
31	$436	$442	$487	$484
32	$450	$464	$503	$508
33	$464	$487	$518	$534
34	$479	$512	$535	$561
35	$494	$537	$551	$589
36	$510	$564	$568	$618
37	$526	$592	$586	$649
38	$542	$622	$604	$681
39	$559	$653	$623	$715
40	$577	$686	$642	$751
TOTALS				
Nominal	$8,723	$8,973	$9,609	$9,829
NPV	$2,045	$2,045	$2,241	$2,241

Exhibit ___ (HA-3)
Schedule 3

Con Edison Electric Rate Case 07-E-0523
Revenue Requirement with Plant Investment Growing at 14% per year
Investment Day 1
Last 20 Years

Investment Day 1	$	100
Annual Growth Rate in Investment		14.00%
Discount Rate		5.00%
Cost of Capital		8.53%
Weighted Cost of Equity		5.60%
Effective Cost of Equity		9.27%
Effective Cost of Capital		12.20%
Negative Net Salvage		20.00%
Average Life - years		20
Depreciation Rate with Salvage		6.00%
Depreciation Rate w/o Salvage		5.00%

Year	Rev. Req. Neg Salvage Recovered over Life		Rev. Req. w Neg Salvage Amortized over 10 years	
	Nominal	Constant NPV	Nominal	Constant NPV
	(1)	(2)	(3)	(4)
21	$1,425	$3,483	$1,405	$3,476
22	$1,625	$3,657	$1,606	$3,650
23	$1,853	$3,840	$1,836	$3,832
24	$2,113	$4,032	$2,098	$4,024
25	$2,410	$4,233	$2,396	$4,225
26	$2,748	$4,445	$2,737	$4,437
27	$3,133	$4,667	$3,125	$4,658
28	$3,573	$4,901	$3,567	$4,891
29	$4,073	$5,146	$4,071	$5,136
30	$4,645	$5,403	$4,642	$5,393
31	$5,295	$5,673	$5,292	$5,662
32	$6,038	$5,957	$6,034	$5,945
33	$6,884	$6,255	$6,879	$6,243
34	$7,848	$6,567	$7,843	$6,555
35	$8,947	$6,896	$8,941	$6,883
36	$10,201	$7,240	$10,194	$7,227
37	$11,630	$7,603	$11,621	$7,588
38	$13,259	$7,983	$13,249	$7,967
39	$15,115	$8,382	$15,105	$8,366
40	$17,232	$8,801	$17,220	$8,784
TOTALS				
Nominal	$130,046	$115,162	$129,861	$114,943
NPV	$26,253	$26,253	$26,203	$26,203

Con Edison Electric Rate Case 07-E-0523
Impact of Eliminating Negative Net Salvage

PSC ACCT	Account Title	CO. ACCT.	BOOK COST	ACCUMULATED PROVISION FOR DEPREC.	BOOK BASIS AVERAGE SERVICE LIFE	BOOK BASIS NET SALVAGE	BOOK BASIS DEPR. RATE %	BOOK BASIS ANNUAL DEPREC. EXPENSE	BOOK BASIS COMPUTED RESERVE FOR DEPREC.	PROPOSED BASIS AVERAGE SERVICE LIFE	PROPOSED BASIS NET SALVAGE	PROPOSED BASIS DEPR. RATE %	PROPOSED BASIS ANNUAL DEPREC. EXPENSE	PROPOSED BASIS COMPUTED RESERVE FOR DEPREC.
	ELECTRIC PLANT IN SERVICE													
	PRODUCTION PLANT													
	STEAM PRODUCTION													
310	LAND AND LAND RIGHTS	9510	4,192,610	-	-	-	-	-	-	-	-	-	-	-
311	STRUCTURES AND IMPROVEMENTS	9514	94,465,043	(77,160,258.00)	65	(35)	1.54	1,453,308	17,781,859	40	(50)	2.50	2,361,626	20,183,589
312	BOILER PLANT EQUIPMENT	9516	137,585,022	(6,658,673.00)	35	(35)	2.86	3,931,001	34,905,021	30	(50)	3.33	4,586,167	32,519,879
314	TURBOGENERATOR UNITS	9522	36,333,192	12,882,597.00	35	(20)	2.86	1,038,091	15,453,354	30	(25)	3.33	1,211,106	14,869,759
315	ACCESSORY ELECTRIC EQUIPMENT	9524	24,409,392	7,126,083.00	35	(20)	2.86	697,411	8,083,170	30	(25)	3.33	813,646	6,879,874
316	MISC. POWER PLANT EQUIPMENT	9526	3,663,167	1,093,102.00	50	(10)	2.00	73,263	670,596	40	(10)	2.50	91,579	636,740
	TOTAL STEAM PRODUCTION		300,648,427	(62,717,148.00)				7,193,075	76,894,001				9,064,125	75,089,841
	OTHER PRODUCTION													
340	LAND AND LAND RIGHTS	9430	308,261	-	-	-	-	-	-	-	-	-	-	-
341	STRUCTURES AND IMPROVEMENTS	9431	6,000,624	4,845,047.00	25	(5)	4.00	240,025	4,334,785	25	(20)	4.00	240,025	4,334,784
342	FUEL HOLDERS, PROD. & ACCESSORIES	9432	1,867,877	1,442,648.00	25	(5)	4.00	74,715	1,197,650	25	(20)	4.00	74,715	1,197,650
344	GENERATORS	9434	17,692,206	9,442,083.00	25	(5)	4.00	707,688	8,254,769	25	(20)	4.00	707,688	8,254,768
345	ACCESSORY ELECTRIC EQUIPMENT	9435	6,129,195	1,426,160.00	25	(5)	4.00	245,168	1,488,858	25	(20)	4.00	245,168	1,553,591
	TOTAL OTHER PRODUCTION		31,998,164	17,155.94				1,267,596	15,276,061				1,267,596	15,340,794
	TOTAL PRODUCTION PLANT		332,646,590	(45,561,211.00)				8,460,671	92,170,062					90,430,635
	TRANSMISSION PLANT													
350	LAND AND LAND RIGHTS	9530	36,875,022	-	-	-	-	-	-	-	-	-	-	-
352	STRUCTURES AND IMPROVEMENTS	9532	140,377,580	24,598,057.00	70	(25)	1.43	2,005,394	21,394,725	70	(35)	1.43	2,005,394	21,430,198
353	STATION EQUIPMENT	9534	1,140,021,993	332,419,040.00	50	(20)	2.00	22,800,440	300,092,518	45	(30)	2.22	25,333,822	325,545,645
354	TOWERS AND FIXTURES	9536	142,094,886	137,521,533.00	45	(40)	2.22	3,157,664	85,181,451	45	(40)	2.22	3,157,664	85,181,451
356	OVERHEAD CONDUCTORS AND DEVICES	9540	82,029,638	75,001,636.00	35	(35)	2.86	2,343,704	50,137,012	35	(35)	2.86	2,343,704	47,539,091
	UNDERGROUND CONDUIT - CAPITAL LEASES	9543	6,989,000	-	-	-	-	-	-	-	-	-	-	-
357	UNDERGROUND CONDUIT	9544	244,116,392	113,035.61	55	(5)	1.82	4,438,480	106,918,201	55	(20)	1.82	4,438,480	107,058,329
357	UNDERGROUND CONDUIT - MAN. & BRONX	9545	122,472,519	43,015,652.00	55	(5)	1.82	2,226,773	48,183,871	55	(20)	1.82	2,226,773	48,247,022
358	UNDERGROUND CONDUCTORS & DEVICES	9546	340,584,933.00	83,626,160.00	50	(15)	2.00	6,811,699	110,239,137	50	(25)	2.00	6,811,699	104,300,384
	TOTAL TRANSMISSION PLANT		2,255,561.96	809,217,689.00				43,784,154	722,146,916				46,317,536	739,302,121

DISTRIBUTION PLANT

360 LAND AND LAND RIGHTS	9550	153,493,383	-											
361 STRUCTURES AND IMPROVEMENTS	9552	239,991,626	65,755,327	50	(25)	2.00	4,799,833	45,619,378	50	(35)	2.00	4,799,833	45,619,378
362 STATION EQUIPMENT	9554	1,357,885,787	467,125,965	45	(20)	2.22	30,175,240	352,270,580	45	(30)	2.22	30,175,240	352,575,312
364 POLES, TOWERS AND FIXTURES	9556	291,586,279	144,860,939	45	(85)	2.22	6,479,695	67,738,112	50	(100)	2.00	5,831,726	62,215,662
303 CAPITALIZED SOFTWARE	9557	-	-	-	-	-					20.00		
365 OVERHEAD CONDUCTORS AND DEVICES	9558	495,481,232	144,776,626	55	(45)	1.82	9,008,750	92,132,084	60	(55)	1.67	8,258,021	85,889,738
366 UNDERGROUND CONDUIT	9560	1,031,252,080	227,910,016	80	(20)	1.25	12,890,651	175,187,123	80	(40)	1.25	12,890,651	175,187,123
366 UNDERGROUND CONDUIT- MAN. & BRONX	9561	1,131,305,001	189,559,386	80	(20)	1.25	14,141,313	145,740,595	80	(40)	1.25	14,141,313	145,740,596
367 UNDERGROUND CONDUCTORS & DEVICES	9562	3,199,081,426	426,343,323	45	(35)	2.22	71,090,698	422,770,924	45	(55)	2.22	71,090,698	423,317,140
368 LINE TRANSFORMERS	9565												
OVERHEAD TRANSFORMERS		186,233,641		35		2.86	5,326,282	42,632,585	45	(5)	2.22	4,138,525	31,985,758
UNDERGROUND TRANSFORMERS		1,638,440,798		45		2.22	36,373,386	354,131,900	30	(5)	3.33	54,614,693	483,881,037
TOTAL LINE TRANSFORMERS		1,824,674,438	379,935,327				41,699,668	396,764,485				58,753,219	515,866,795
369 SERVICES - OVERHEAD	9566	98,024,567	56,688,267	50	(145)	2.00	1,960,491	15,970,311	40	(175)	2.50	2,450,614	20,552,419
369 SERVICES - UNDERGROUND	9567	860,033,505	178,334,640	70	(120)	1.43	12,286,193	90,314,271	60	(150)	1.67	14,333,892	105,312,987
370 METERS													
ELECTROMECHANICAL	9569	207,685,333	72,554,147	35		2.86	5,939,801	72,554,147	70		2.86	5,939,801	72,554,147
SOLID STATE	NEW	35,970,380.00	1,151,204	20		5.00	1,798,519	1,553,681	35		5.00	1,798,519	1,553,681
		243,655,713	73,705,351				7,738,320	74,107,828				7,738,320	74,107,828
370 METER INSTALLATIONS													
ELECTROMECHANICAL	9571	100,384,253	35,068,889	35		2.86	2,870,990	35,068,889	20		2.86	2,870,990	35,068,889
SOLID STATE	NEW	45,930,756	1,395,173	20		5.00	2,296,538	1,983,903	35		5.00	2,296,538	1,983,903
		146,315,009	36,464,061				5,167,528	37,052,792	20			5,167,527	37,052,792
371 INSTALLATION ON CUSTOMERS' PREMISES	9573	4,448,190	1,546,144	60		1.67	74,285	1,337,070	60		1.67	74,285	1,337,070
373 O.H. STREET LIGHTING & SIGNAL SYS.	9575	20,544,378	13,893,515	35	(80.00)	2.86	586,982	5,406,263	45	(100)	2.22	456,542	3,949,337
373 U.G. STREET LIGHTING & SIGNAL SYS.	9576	131,387,161	9,886,567	65	(55.00)	1.54	2,021,341	18,122,780	65	(75)	1.54	2,021,341	18,103,220
TOTAL DISTRIBUTION PLANT		11,229,159,795	2,416,785,456				220,120,987	1,940,534,597				238,183,219	2,066,827,396
TOTAL ELECTRIC PLANT IN SERVICE		13,817,368,348	3,180,441,933				272,365,811	2,754,851,575				284,500,755	2,896,560,151
RESERVE VARIATION AMOUNT								425,590,358		Composite Rate			283,881,782
RESERVE VARIATION PERCENTAGE								13.38%				2.06%	8.93%

	COMMON UTILITY PLANT IN SERVICE												
	MISC. INTANGIBLE PLANT												
	CAPITALIZED SOFTWARE	9514											
	5 YEAR AMORTIZATION		2,337,526	239,219	5		20.00	448,369	239,219	5		20.00	446,368.60	239,219
	10 YEAR AMORTIZATION		9,297,114	166,111	10		10.00	929,711	166,111	10		10.00	929,711.40	166,111
	15 YEAR AMORTIZATION									15		6.67		
	15 YEAR AMORTIZATION - AMI									15		6.67		
	TOTAL CAPITALIZED SOFTWARE		11,634,641	405,330				1,378,080	405,330				1,378,080	405,330
	BUILDINGS AND YARDS													
389	LAND AND LAND RIGHTS	9810	26,996,994											
390	STRUCTURES AND IMPROVEMENTS	9812	508,118,807	84,976,723	50	(30.00)	2.00	13,211,089	114,577,270	50	(60)	3.20	16,259,802	113,619,161
390	STRUCT. AND IMPROV. - CAP LEASES	9813	22,768,000											
	TOTAL BUILDINGS AND YARDS		557,883,801	84,976,723				13,211,089	114,577,270				16,259,802	113,619,161
	GENERAL PLANT													
391	ELECTRONIC DATA PROCESSING EQ.	9815	337,071,430	148,913,457	8	5.00	11.88	40,044,085	148,913,457	8	5	11.88	40,044,086	148,913,457
391	AMI ELECTRONIC DATA PROCESSING EQ.	NEW	-	-	-	-	-	-	-	8	5	11.68	-	-
391	OTHER OFFICE FURNITURE AND EQ.	9816	62,144,188	28,464,904	18	-	5.56	5,224,935	28,464,904	18		5.56	5,224,935	28,464,904
392	TRANSPORTATION EQUIPMENT	9820	197,433,876	58,373,587	8	10.00	11.25	22,211,311	58,373,587	8	10	11.25	22,211,311	58,373,587
393	STORES EQUIPMENT	9824	10,308,740	4,812,833	20	5.00	4.75	714,838	4,812,833	20	5	4.75	714,838	4,812,633
394	TOOLS, SHOP AND GARAGE EQUIP.	9830	68,595,456	27,250,966	18	5.00	5.28	4,958,080	27,250,966	18	5	5.28	4,958,080	27,250,966
395	LABORATORY EQUIPMENT	9828	78,223,026	31,056,487	20	-	5.00	4,649,390	31,056,487	20		5.00	4,649,390	31,056,487
395	POWER OPERATED EQUIPMENT	9829	7,345,682	4,973,932	12	10.00	7.50	550,926	4,973,932	12	10	7.50	550,926	4,973,932
397	COMMUNICATION EQUIPMENT	9832	144,846,571	60,572,154	15	-	6.67	9,661,266	60,572,154	15		6.67	9,661,266	60,572,154
397	AMI COMMUNICATION EQUIPMENT	NEW	-	-	-	-	-	-	-	15		6.67	-	-
398	MISCELLANEOUS EQUIPMENT	9634	31,727,861	14,310,195	20		5.00	1,697,014	14,310,195	20		5.00	1,697,014	14,310,195
	TOTAL GENERAL PLANT		937,696,830	378,728,516				89,711,846	378,728,516				89,711,846	378,728,516
	TOTAL COMMON UTILITY PLANT		1,507,215,271	464,110,570				104,301,015	493,711,116				107,349,728	492,753,008
	RESERVE VARIATION AMOUNT								(29,600,547)					(28,642,438)
	RESERVE VARIATION PERCENTAGE '								-6.00%					-5.81%
	TOTAL DEPRECIATION EXPENSE PER EXHIBIT 25												**501,965,115**	
	TOTAL DEPRECIATION EXPENSE PER EXHIBIT (HA-4)												**391,850,483**	
	CITY ADJUSTMENT TO DEPRECIATION EXPENSE												**110,114,632**	

Exhibit ____ (HA-5)

Con Edison Electric Case 07-E-0523
Five Year and Ten Year Net Salvage Electric Plant

PSC ACCT	Account Title	CO. ACCT.	NET SALVAGE 2002-2006	NET SALVAGE 1997-2006
	ELECTRIC PLANT IN SERVICE			
	PRODUCTION PLANT			
	STEAM PRODUCTION			
310	LAND AND LAND RIGHTS	9510		
311	STRUCTURES AND IMPROVEMENTS	9514	39,187,084	50,721,951
312	BOILER PLANT EQUIPMENT	9516	31,990,500	68,735,175
314	TURBOGENERATOR UNITS	9522	4,110,039	10,093,435
315	ACCESSORY ELECTRIC EQUIPMENT	9524	1,127,413	2,559,423
316	MISC. POWER PLANT EQUIPMENT	9526	729,298	749,655
	TOTAL STEAM PRODUCTION			
	OTHER PRODUCTION			
340	LAND AND LAND RIGHTS	9430		
341	STRUCTURES AND IMPROVEMENTS	9431		
342	FUEL HOLDERS, PROD. & ACCESSORIES	9432		
344	GENERATORS	9434		
345	ACCESSORY ELECTRIC EQUIPMENT	9435		
	TOTAL OTHER PRODUCTION		1,261,387	4,639,029
	TOTAL PRODUCTION PLANT			
	TRANSMISSION PLANT			
350	LAND AND LAND RIGHTS	9530		
352	STRUCTURES AND IMPROVEMENTS	9532	756,601	914,278
353	STATION EQUIPMENT	9534	20,153,488	31,717,588
354	TOWERS AND FIXTURES	9536	3,094	3,094
356	OVERHEAD CONDUCTORS AND DEVICES	9540		
	UNDERGROUND CONDUIT - CAPITAL LEASES	9543		
357	UNDERGROUND CONDUIT	9544	8,008,960	8,761,337
357	UNDERGROUND CONDUIT - MAN. & BRONX	9545		
358	UNDERGROUND CONDUCTORS & DEVICES	9546	15,727,159	20,388,709
	TOTAL TRANSMISSION PLANT			
	DISTRIBUTION PLANT			
360	LAND AND LAND RIGHTS	9550		
361	STRUCTURES AND IMPROVEMENTS	9552	2,814,652	4,598,373
362	STATION EQUIPMENT	9554	22,063,729	38,894,300
364	POLES, TOWERS AND FIXTURES	9556	10,301,104	19,410,071
303	CAPITALIZED SOFTWARE	9557		
365	OVERHEAD CONDUCTORS AND DEVICES	9558	12,712,099	21,852,550
366	UNDERGROUND CONDUIT	9560		
366	UNDERGROUND CONDUIT- MAN. & BRONX	9561	20,040,849	28,994,159
367	UNDERGROUND CONDUCTORS & DEVICES	9562	252,146,464	406,281,322
368	LINE TRANSFORMERS	9565	23,908,544	27,927,362
	OVERHEAD TRANSFORMERS			
	UNDERGROUND TRANSFORMERS			
	TOTAL LINE TRANSFORMERS			
369	SERVICES - OVERHEAD	9566	5,523,128	10,968,034
369	SERVICES - UNDERGROUND	9567	87,906,116	137,437,401
370	METERS			
	ELECTROMECHANICAL	9569	1,417,509	1,258,122
	SOLID STATE	NEW		
370	METER INSTALLATIONS			
	ELECTROMECHANICAL	9571		
	SOLID STATE	NEW		
371	INSTALLATION ON CUSTOMERS' PREMISES	9573		247
373	O.H. STREET LIGHTING & SIGNAL SYS.	9575	900,988	1,402,528
373	U.G. STREET LIGHTING & SIGNAL SYS.	9576	29,145,204	31,498,767
	TOTAL DISTRIBUTION PLANT			
	TOTAL ELECTRIC PLANT IN SERVICE		591,935,410	929,806,909
	FIVE YEAR AVERAGE		**$ 118,387,082**	
	TEN YEAR AVERAGE			**$ 92,980,691**

Exhibit ____ (HA-6)

Con Edison Electric Case 07-E-0523
Amoritzation of Negative Net Salvage
Impact on Future Rate Plans

Rate Plan beginning 4/08	Incurred Negative Net Salvage	Amortization over ten years	Rate Allowance	Surplus/Deficiency	Accumulated Surplus
RY 1	$100,000,000	$5,000,000	$50,000,000	$45,000,000	$45,000,000
RY 2	$100,000,000	$15,000,000	$50,000,000	$35,000,000	$80,000,000
RY 3	$100,000,000	$25,000,000	$50,000,000	$25,000,000	$105,000,000
Rate Plan beginning 4/11					
RY 1	$100,000,000	$35,000,000	$50,000,000	$15,000,000	$120,000,000
RY 2	$100,000,000	$45,000,000	$50,000,000	$5,000,000	$125,000,000
RY 3	$100,000,000	$55,000,000	$50,000,000	($5,000,000)	$120,000,000
Rate Plan beginning 4/14					
RY 1	$100,000,000	$65,000,000	$50,000,000	($15,000,000)	$105,000,000
RY 2	$100,000,000	$75,000,000	$50,000,000	($25,000,000)	$80,000,000
RY 3	$100,000,000	$85,000,000	$50,000,000	($35,000,000)	$45,000,000

Con Edison Electric Rate Case 07-E-0523
Productivity Opportunities

	Productivity Opportunity	All $ Amounts in thousands				Comments
Operations Capital	**Y/N**	2008	2009	2010	Total	
ED1 costs	N	$ 125,000	$ 125,000	$ 125,000	$ 375,000	
Secondary Open Mains (incl. conduit)	N	$ 92,327	$ 85,363	$ 81,359	$ 259,049	
Underground Secondary Reliability Program	N	$ 71,296	$ 73,137	$ 77,804	$ 222,237	
Total ED-2 ("Transformer Purchases")	N	$ 69,025	$ 69,025	$ 69,025	$ 207,075	
Network Transformer Replacements >100% <115%	N	$ 51,466	$ 51,463	$ 58,184	$ 161,113	
Primary Feeder Relief	N	$ 40,497	$ 41,003	$ 41,523	$ 123,023	
PILC	N	$ 39,200	$ 39,200	$ 39,200	$ 117,600	
Emergency Primary Cable Replacement	N	$ 35,536	$ 35,206	$ 34,206	$ 104,948	
Transformer Remote Monitoring	Y	$ 31,525	$ 30,416	$ 29,728	$ 91,669	Improved / targeted operational response.
Network transformer replacements >115% <125%	N	$ 25,913	$ 25,120	$ 19,402	$ 70,435	
Transformer Installation	N	$ 23,279	$ 21,594	$ 21,594	$ 66,467	
Meter Installation	N	$ 19,320	$ 17,721	$ 17,771	$ 54,812	
Network Reliability	N	$ 18,909	$ 25,206	$ 25,723	$ 69,838	
Temporary Services (incl. conduit)	N	$ 16,053	$ 16,053	$ 16,053	$ 48,159	
Network/Non Network Transformers >125%	N	$ 15,525	$ 14,901	$ 15,288	$ 45,714	
Street Lights (incl. conduit)	N	$ 15,253	$ 15,253	$ 15,003	$ 45,509	
ED-3 Meter Purchase	N	$ 11,967	$ 12,349	$ 9,802	$ 34,118	
4 kV Feeder & Wire Relief	N	$ 10,605	$ 9,736	$ 9,872	$ 30,213	
Secondary Monitoring (Secondary Model Validation)	Y	$ 10,400	$ 10,200	$ 10,200	$ 30,800	Improved information to enhance operator actions and engineering studies.
Parkview (East Harlem Network)	N	$ 10,000			$ 10,000	
(Primary) Cable Crossings	N	$ 8,833	$ 9,033	$ 14,329	$ 32,195	
Overhead	N	$ 8,267	$ 8,267	$ 8,267	$ 24,801	
Vented Manhole Cover	N	$ 8,000			$ 8,000	
Autoloop Reliability	Y	$ 7,974	$ 7,376	$ 7,359	$ 22,709	Improved information and equipment to enhance operator actions.
Distribution Substation Load Relief	N	$ 6,400	$ 6,400	$ 6,400	$ 19,200	
HiPot	N	$ 6,303	$ 6,399	$ 6,498	$ 19,200	
Street Light Isolation Transformers	N	$ 6,100	$ 6,100	$ 6,100	$ 18,300	
Secondary Visualization Model	Y	$ 5,400	$ 4,000	$ 1,900	$ 11,300	Improved information to enhance operator actions.
Electric Distribution Control Center Upgrades	Y	$ 5,000	$ 2,500	$ 500	$ 8,000	Improved information to enhance operator actions.
Astor (Herald Sq. Transfer)	N	$ 5,000	$ 3,000		$ 8,000	
179th Mott Haven 25 MW	N	$ 5,000	$ 5,000		$ 10,000	
Rockefeller Center to Astor	N	$ 5,000	$ 8,000		$ 13,000	
4 kV Cable Replacement	N	$ 4,461	$ 4,461	$ 4,461	$ 13,383	
Mapping System Upgrades	Y	$ 4,000	$ 6,500	$ 6,500	$ 17,000	Improved information to enhance operator actions.
White Plains to Rockview S/S	N	$ 4,000			$ 4,000	
Granite Hill to Rockview	N	$ 4,000			$ 4,000	
Newtown	N	$ 3,945	$ 4,339	$ 4,273	$ 12,557	
SF6 Switches	Y	$ 3,468	$ 4,243	$ 4,356	$ 12,067	Improved operational response - feeder sectionalizing.
#4,#6 Self Supporting Wire	Y	$ 3,410	$ 3,165	$ 3,169	$ 9,744	Equipment modernization - improved operational response.
Overhead Transformer Relief	N	$ 3,150	$ 3,150	$ 3,150	$ 9,450	
NonNetwork Fdr Relief (Open Wire)	N	$ 3,000	$ 1,800	$ 1,800	$ 6,600	
Randall's Island	N	$ 3,000	$ 2,500		$ 5,500	
Integrated System Model	Y	$ 3,000	$ 2,500	$ 3,000	$ 8,500	Improved information to enhance operator actions and engineering studies.
Shunt reactors	N	$ 2,727	$ 2,752	$ 2,761	$ 8,240	
Grounding Transformers	N	$ 2,519	$ 2,519	$ 2,519	$ 7,557	

Intelligent OH DAS Autoloop System	Y	$	2,500	$	2,500	$	2,500	$	7,500	Improved information to enhance operator actions.
ESCO Switch Replacement (Kyle)	Y	$	2,485	$	2,509	$	2,333	$	7,327	Equipment modernization - improved operational response.
Rear-Lot Pole Elimination	Y	$	2,437	$	2,437	$	2,437	$	7,311	Equipment modernization and improved access for improved operational response.
Penn/Waterside	N	$	2,400					$	2,400	
4Kv USS Switchgear Replacement	Y	$	2,200	$	2,200	$	2,200	$	6,600	Equipment modernization - improved operational response.
Secondary Main Relief	N	$	2,150	$	2,150	$	1,650	$	5,950	
Telecom	N	$	2,013	$	1,176	$	1,176	$	4,365	
York Substation (Hunter Transfer 88MW)	N	$	2,000	$	8,000	$	5,000	$	15,000	
Grid Optimization (CALM)	Y	$	1,800	$	1,800	$	1,800	$	5,400	Improved information to enhance operator actions.
House Isolation Transformers	N	$	1,760	$	240			$	2,000	
Aerial (Okonite) Cable Replacement	Y	$	1,760	$	2,521	$	2,532	$	6,813	Equipment modernization - improved operational response.
C Truss Program	N	$	1,729	$	1,746	$	1,763	$	5,238	
Electric Mobile Dispatch & Extend to Construction	Y	$	1,700	$	1,000	$	1,000	$	3,700	Improved communications and operational dispatch capability.
Power Quality (PQNodes) System Upgrade	N	$	1,650	$	1,650	$	1,650	$	4,950	
SCADA Systems Consolidation	Y	$	1,500	$	800	$	600	$	2,900	Improved information to enhance operator actions.
Decision Aids	Y	$	1,500	$	1,500	$	1,500	$	4,500	Improved information to enhance operator actions.
Enhanced 4 kV Grid Monitoring	Y	$	1,500	$	2,500	$	3,500	$	7,500	Improved information to enhance operator actions.
Pole Attachment Project	N	$	1,400					$	1,400	
Elmsford Refurbishment 2008	N	$	1,300	$	2,000			$	3,300	
4 kV UG Reliability	Y	$	1,268	$	1,300	$	1,333	$	3,901	Improved information to enhance operator response.
Meter Shop ADAMS	Y	$	1,250	$	1,250			$	2,500	Improved data and work management.
ATS Installation USS Reliability XW	Y	$	1,050	$	2,450	$	2,450	$	5,950	Equipment modernization - improved operational response.
Transformer Asset Mgmt.	Y	$	1,000	$	500			$	1,500	Improved data management and decision making capability.
USS Life Extension Program	N	$	1,000	$	1,000	$	425	$	2,425	
Integrated Route Sheet (Work Management)	Y	$	1,000	$	3,000	$	3,000	$	7,000	Decreased paperwork and improved data management.
Tank Rupture Mitigation	N	$	900					$	900	
Wireless Support for Electric Operations	Y	$	869					$	869	Improved communications.
Targeted Primary DBC Replacement	N	$	800	$	800	$	800	$	2,400	
Automated Emergency Ties	Y	$	750	$	750	$	750	$	2,250	Improved information and functinality to enhance operator response.
4 Kv Breaker Replacement	Y	$	730	$	769	$	745	$	2,244	Equipment modernization - improved operational response.
Facility Improvement Program	N	$	725	$	425			$	1,150	
URD Cable Rejuvenation/Fault Indicator	Y	$	608	$	806	$	806	$	2,220	Equipment modernization - improved operational response.
Equipment Analysis Group (IT Initiative)	Y	$	600	$	320	$	120	$	1,040	Improved information to enhance operator actions.
Commercial Service Representative Automation	Y	$	600	$	500			$	1,100	Decreased paperwork and improved data management.
Network Transformer Natural Ester (FR3) program	N	$	600	$	600	$	600	$	1,800	
Oil Minders	Y	$	600	$	600	$	600	$	1,800	Improved information / alarms to enhance operator actions.
USS Transformer Replacement	N	$	600	$	600	$	600	$	1,800	
Emergency Equipment Management System	Y	$	600					$	600	Improved information to enhance operator response.
Overhead Secondary Reliability Program	Y	$	500	$	500	$	500	$	1,500	Improved information to enhance operator response.
High Tension Monitoring Data Acquisition System	Y	$	500	$	650	$	500	$	1,650	Improved information to enhance operator response and engineering studies.
Cedar Street 3rd Bank	N	$	500					$	500	
System Trouble Analysis and Response (STAR)	Y	$	500					$	500	Improved information / alarms to enhance operator actions and engineering analysis.
NWT Failure Analysis - Polytechnic	N	$	489	$	267			$	756	
4 kV Feeder Sectionalizing	Y	$	450	$	450	$	450	$	1,350	Equipment modernization - improved operational response.
Overhead Feeder Reliability	Y	$	450	$	750	$	750	$	1,950	Targeted equipment modernization - improved operational response.
Joint Pole Use Software	Y	$	450					$	450	Improved information to enhance operator response.
3 Phase Gang Switch Replacement	Y	$	400	$	400	$	400	$	1,200	Equipment modernization - improved operational response.
Accounting by Network	N	$	350	$	1,500	$	1,500	$	3,350	
4 Kv Disaster Recovery	Y	$	300	$	300			$	600	Improved information to enhance operator actions.
Tap Changer Position Indicator System	Y	$	250	$	250	$	250	$	750	Improved information to enhance operator actions.
Auto Reclose On Bank Breakers	Y	$	250	$	250	$	250	$	750	Increased system automation and reduced operator response.
Trip Coil Monitor	Y	$	235	$	235	$	235	$	705	Improved information to enhance operator actions.
Bruckner 2008 8MX NY Post	N	$	200					$	200	

33 kV Interruptible Switches	Y	$ 160	$ 435	$ 335	$ 930	Equipment modernization - improved operational response.
USS Automation	Y	$ 150	$ 150	$ 150	$ 450	Improved information to enhance operator actions.
4kV Load Shedding System	Y	$ 150	$ 150	$ 150	$ 450	Improved information and operator tools to enhance operator actions.
ATS Automation	Y	$ 150	$ 150	$ 100	$ 400	Improved information and operator tools to enhance operator actions.
13 kV Feeder Sectionalizing	Y	$ 142	$ 135	$ 21	$ 298	Equipment modernization - improved operational response.
4 kV Substations - Reliability	N	$ 111	$ 111	$ 1,774	$ 1,996	
Temperature Gauges	Y	$ 100	$ 100	$ 100	$ 300	Improved information to enhance operator actions.
Anderson Switch Replacement	Y	$ 100	$ 100	$ 100	$ 300	Equipment modernization - improved operational response.
Area Profile System	Y	$ 100			$ 100	Improved information to enhance operator actions.
Willowbrook	N		$ 1,200		$ 1,200	
Fresh Kills Load Transfer Capability	N		$ 3,000	$ 6,000	$ 9,000	
Work Management Project Tracking	Y		$ 13,000	$ 10,000	$ 23,000	Improved information to enhance operator response.
Wainwright	N			$ 1,200	$ 1,200	
Roosevelt (30MW)	N			$ 500	$ 500	
Madison (30MW)	N			$ 4,000	$ 4,000	
Lenox Hill to York Substation	N			$ 5,500	$ 5,500	
Distribution Simulator	Y			$ 2,000	$ 2,000	Increased / improved training to improve operator response and engineering analysis.
Rapid Restore - Overhead	Y			$ 650	$ 650	Improved information and communication to enhance operator actions.
Totals		$ 913,374	$ 898,432	$ 885,364	$ 2,697,170	

Substation Operations Capital Projects		2008	2009	2010	Total	
West Side - Establish New Transmission Switching Station	N	$ 135,000	$ 50,000	$ 75,000	$ 260,000	
Parkview- Establish New Area Station	N	$ 49,800			$ 49,800	
York - Establish New Area Substation	N	$ 46,000	$ 60,000	$ 21,000	$ 127,000	
Elmsford - Install New Substation	N	$ 36,000	$ 28,500	$ 1,000	$ 65,500	
Astor - Establish New Area Station	N	$ 33,000	$ 6,000		$ 39,000	
Newtown - Establish New Area Station	N	$ 20,000	$ 40,000	$ 60,000	$ 120,000	
Replace Obsolete Transformers	Y	$ 17,200	$ 13,000	$ 21,000	$ 51,200	
Spare Transformer Program	N	$ 16,500	$ 12,000	$ 12,000	$ 40,500	
Rockview - Establish New Area Substation	N	$ 15,400			$ 15,400	
Expansion of 49th Street Substation	N	$ 10,000	$ 20,000	$ 10,000	$ 40,000	
Woodrow - Install 3rd Transformer with 138kV Feeder	N	$ 10,000	$ 10,000	$ 4,800	$ 24,800	
Replace Overdutied 13/27kV Circuit Breaker Programs	Y	$ 8,800	$ 8,800	$ 8,800	$ 26,400	
Area Substation Reliability	N	$ 8,500	$ 8,500	$ 8,500	$ 25,500	
Pumping Plant Improvement	Y	$ 8,500	$ 8,500	$ 8,500	$ 25,500	
Mott Haven - Establish 345 kV Switching Station and Area Station	N	$ 8,000			$ 8,000	
Obsolete 138kV Circuit Breaker Program	Y	$ 7,700	$ 7,700	$ 7,700	$ 23,100	
Replace 345kV Circuit Breaker Other Than ATB and Compressors	Y	$ 7,000	$ 7,000	$ 7,000	$ 21,000	
High Voltage Test Sets		$ 6,500	$ 2,000	$ 2,000	$ 10,500	
Small Capital Projects	N	$ 6,000	$ 6,000	$ 6,000	$ 18,000	
Facility Upgrade (Incl Temporary Trailer Removals)	N	$ 6,000	$ 6,000	$ 6,000	$ 18,000	
Reduce Fault Clearing Time	N	$ 5,200			$ 5,200	
Land Acquisition for Future New Substations	N	$ 5,000	$ 45,000	$ 55,000	$ 105,000	
Security Enhancements	Y	$ 4,100	$ 4,100	$ 4,000	$ 12,200	

Battery & Rectifier Replacement	N	$	3,500	$	3,500	$	3,500	$	10,500	
Environmental Risk Reduction Program	N	$	3,500	$	3,500	$	3,500	$	10,500	
SOCCS - RTU Replacement	Y	$	3,000	$	4,000	$	4,000	$	11,000	Equipment modernization - improved operational response.
Capacitor Cable Upgrade Program	N	$	3,000	$	3,000	$	3,000	$	9,000	Equipment availability and modernization to provide for improved operational response.
Substation Automation - East River	Y	$	3,000	$	3,000	$	3,000	$	9,000	
Roof Replacement	N	$	3,000	$	3,000	$	3,000	$	9,000	Improved information to enhance operator actions.
Emergent Load Relief Program	N	$	3,000	$	3,000	$	3,000	$	9,000	Improved communications and operational dispatch capability.
Install 138kV Breakers 7 & 8 and Third Cap Bank - Jamaica	N	$	3,000					$	3,000	Equipment modernization - improved operational response.
Replace Disconnect Switches	Y	$	2,900	$	3,600	$	3,600	$	10,100	Equipment modernization - improved operational response.
Substation Continuance - E63rd Street	N	$	2,500	$	5,000	$	5,000	$	12,500	Equipment modernization - improved operational response.
Relay Modifications	Y	$	2,500	$	2,500	$	2,500	$	7,500	Equipment modernization - improved operational response.
Cedar St. - Third Transformer and 138kv Feeder	N	$	2,400					$	2,400	
Category Alarms	Y	$	2,250	$	2,250	$	2,250	$	6,750	Improved communications and operational dispatch capability.
Fresh Kills - Install 30 MVAR Capacitor Bank	N	$	2,000	$	2,000			$	4,000	Equipment modernization - improved operational response.
Upgrade Analog Circuits To Digital Fiber	Y	$	2,000	$	2,000	$	2,000	$	6,000	
Substation Automation	Y	$	2,000	$	2,000	$	2,000	$	6,000	
Substation Loss Contingency	N	$	2,000	$	2,000	$	2,000	$	6,000	Equipment modernization - improved operational response.
Fox Hills - Install Two New Feeder Positions	N	$	1,600					$	1,600	
Spare Equipment Other than Transformer	N	$	1,500	$	1,500	$	1,500	$	4,500	
Construct Relay Enclosure Houses	Y	$	1,500	$	1,500	$	1,500	$	4,500	Equipment modernization - improved operational response.
Modify Auto Underfrequency Loadshedding	N	$	1,385					$	1,385	Equipment modernization - improved operational response.
Transformer Cooling (Various Substations) Program	N	$	1,000	$	1,000	$	500	$	2,500	Equipment modernization - improved operational response.
PURS Supervisory Control & Data Acquisition	Y	$	1,000	$	1,000	$	3,000	$	5,000	
Control Cable Upgrade Program	Y	$	1,000	$	1,000	$	1,000	$	3,000	Improved information to enhance operator actions.
Corona Settlement	Y	$	1,000	$	1,000	$	1,000	$	3,000	Equipment modernization - improved operational response.
Additional G&T Devices		$	1,000	$	1,000	$	1,000	$	3,000	
Diesels / Blackstart Restoration (Phase 2) - Upgrade Station L&P	Y	$	600	$	1,200	$	1,000	$	2,800	
Upgrade 13kV L&P Transformer - Fresh Kills	N	$	600					$	600	
Fire Protection Program	N	$	500	$	500	$	500	$	1,500	Improved equipment acess and modernization - improved operational response.
Obsolete Circuit Switcher Replacement	Y	$	500	$	500	$	500	$	1,500	Improved information to enhance operator actions.
Revenue Metering Upgrade	N	$	500	$	500	$	500	$	1,500	
Reinforced Ground Grid (Various Substations)	N	$	500	$	500	$	500	$	1,500	
Switchgear Enclosure Upgrade Program	Y	$	500	$	500	$	500	$	1,500	
SPCC Plan for Transmission Cable System	N	$	500					$	500	Equipment modernization - improved operational response.
New Maximo Upgrade	Y	$	400	$	400			$	800	
Condition Based Transformer Monitoring	Y	$	250	$	250	$	250	$	750	Equipment modernization - improved operational response.
Technology Improvements- Work Permit System, etc	Y	$	210	$	705	$	500	$	1,415	Equipment modernization - improved operational response.
Mapping/Modeling System	Y	$	200	$	200	$	200	$	600	
Hudson Yards - Establish New Area Station	N			$	44,000	$	22,000	$	66,000	Additional equipment to provide for operation flexibility and improved response.
Install Phase Angle Regulator	N			$	2,500	$	7,000	$	9,500	
Install Series Reactor	N			$	2,500	$	8,000	$	10,500	
East River Complex - Install Wall	N			$	2,500	$	2,500	$	5,000	
Idlewild - Establish New Area Station	N			$	700	$	6,300	$	7,000	
Substation Continuance - White Plains	N			$	550			$	550	

Hillside - Establish New Area Substation	N		$ 300	$ 2,700	$ 3,000	Improved information to enhance operator actions.
Queens - Establish New Transmission Station	N			$ 4,000	$ 4,000	Equipment modernization - improved operational response.
Gowanus - Establish New Transmission Station	N			$ 5,000	$ 5,000	Improved information to enhance operator actions.
Nevins St. - Establish New Area Station	N			$ 3,000	$ 3,000	Improved information to enhance operator actions.
Substation Continuance - Buchanan	N			$ 5,000	$ 5,000	
Substation Continuance - E179th Street	N			$ 2,500	$ 2,500	
Totals		$ 536,095	$ 461,755	$ 430,600	$ 1,428,450	

SYSTEM AND TRANSMISSION OPERATIONS

CAPITAL PROJECTS		2008	2009	2010	Total	
Reinforcement - Feeder M29 System Reliability	N	$ 130,000	$ 68,000	$ 24,000	$ 222,000	
East 13th Street Load Pocket Load Relief	N	$ 36,400	$ 54,900	$ 91,000	$ 182,300	
Replace 138kv Feeders 18001 & 18002	N	$ 25,000	$ 22,000	$ 6,000	$ 53,000	
Replace Feeder 69M41 & 69M45	N	$ 17,800	$ 18,000	$ 2,200	$ 38,000	
Energy Management Systems (EMS) Advanced Technology	Y	$ 8,200	$ 2,000		$ 10,200	Improved information to enhance operator actions.
Re-Conductor Feeders 69M61 – 69M65 Load Relief	N	$ 7,000	$ 8,000		$ 15,000	
Feeder M51 System Reliability	N	$ 6,700	$ 6,700	$ 6,700	$ 20,100	
Emergent Transmission Reliability System Reliability		$ 5,000	$ 10,000	$ 10,000	$ 25,000	Improved information to enhance operator actions.
Transmission Feeder Failures	N	$ 5,000	$ 5,000	$ 5,000	$ 15,000	
Feeder 38M72 Upgrade System Reliability	N	$ 4,200	$ 6,300	$ 10,500	$ 21,000	
Millwood - Replace Wood Poles W/Steel Poles System Reliability	N	$ 4,000			$ 4,000	
Replace Feeder 69M43/69M44 With 38M53 & 38M54 Feeder	N	$ 3,700			$ 3,700	
Facilities / Utilities Improvements Other	N	$ 3,000	$ 4,850	$ 1,850	$ 9,700	
Reinforce Hudson River Crossing Towers – Feeders Y88 and Y94	N	$ 2,400	$ 5,100		$ 7,500	
Upgrade Overhead 345kv Transmission Structures System Reliability	N	$ 2,100	$ 2,200	$ 2,300	$ 6,600	
Re-Conductor Dunwoodie – Sprain Brook Feeders 99941 and 99942	N	$ 2,000	$ 4,000	$ 4,000	$ 10,000	
Operation Requirements (Online systems) Advanced Technology	Y	$ 2,000	$ 2,400	$ 2,650	$ 7,050	Improved information to enhance operator actions.
DEC Program Line Environmental	N	$ 1,750	$ 1,750		$ 3,500	
M-Line Tower Relocation Interference	N	$ 1,500	$ 1,500		$ 3,000	
Dynamic Feeder Rating Load Relief	N	$ 1,000	$ 1,000	$ 1,000	$ 3,000	
District Operations Improvement Advanced Technology	Y	$ 900	$ 1,000	$ 1,800	$ 3,700	Improved information to enhance operator actions.
Work Management Systems Advanced Technology	Y	$ 700	$ 550	$ 250	$ 1,500	Improved information to enhance operator actions.
Cable System Enhancement - Pothead Alarms System Reliability	Y	$ 500	$ 500	$ 500	$ 1,500	Improved information to enhance operator actions.
Feeder M56 (Westside Switching) Security	N		$ 10,000	$ 20,000	$ 30,000	
Bulk Power Improvements Advanced Technology			$ 500	$ 500	$ 1,000	Improved information to enhance operator actions.
EMS Continuance	N			$ 500	$ 500	
Mott Haven / East Queens / Gowanus - 2- 345kv Feeders	N			$ 40,000	$ 40,000	
Environmental Enhancements Environmental	Y			$ 1,750	$ 1,750	Improved information to enhance operator actions.
Replace 69kv Feeders On QBB System Reliability	N			$ 11,300	$ 11,300	
Totals		$ 270,850	$ 236,250	$ 243,800	$ 750,900	
Grand Total Capital Projects		$ 1,343,040	$ 1,159,760	$ 1,105,000	$ 3,607,800	

Total Capital Projects with Prodcutivity Potential	**$ 200,231**	**$ 204,072**	**$ 206,609**	**$ 610,912**

System and Transmission Operations O&M		RY 1	RY2	RY3	Total	
Telecommunications costs Advanced Technology	Y	$ 5,100	$ 5,100	$ 5,100	$ 15,300	Improved communications and information to enhance operator actions.
ECC facility maintenance costs Improve Reliability	N	$ 2,100	$ 2,100	$ 2,100	$ 6,300	
Tree Trimming Improve Reliability	Y	$ 2,004	$ 2,004	$ 2,004	$ 6,012	Increased oversight to generate quality and productivity improvements.
Manhole Refurbishment Program Environmental	Y	$ 1,200	$ 1,200	$ 1,200	$ 3,600	Facility betterment and improved access for improved operator response
Manhole Inspections Environmental	Y	$ 950	$ 950	$ 950	$ 2,850	Increased oversight to generate quality and productivity improvements.
New EMS system license maintenance Advanced Technology	N	$ 700	$ 700	$ 700	$ 2,100	
Improve Overhead Transmission Restoration Capability Improve Storm Response	Y	$ 700	$ 700	$ 500	$ 1,900	Increased / improved training to improve operator response.
PFT Patrols - New Environmental Program Environmental	Y	$ 600	$ 600	$ 600	$ 1,800	Enhanced feeder leak detection resulting in decreased unplanned responses.
Conductor Repairs Improve Reliability	N	$ 450	$ 450	$ 450	$ 1,350	
AECC equipment support and maintenance Advanced Technology	Y	$ 400	$ 400	$ 400	$ 1,200	New and improved methods of performing existing functions.
Tower Repairs - Lights and Other Improve Reliability	N	$ 390	$ 440	$ 390	$ 1,220	
Overhead Line Inspections Improve Reliability	Y	$ 278	$ 278	$ 278	$ 834	Increased oversight to generate quality and productivity improvements.
Install Bird Discouragers on Selected Portions of P & F Li Improve Reliability	Y	$ 270	$ 270		$ 540	Decreased maintenance and reduction in unplanned outages.
Live Line Maintenance Procedures - New Program Process Improvement	Y	$ 175	$ 175	$ 175	$ 525	Increased / improved training to improve operator response.
Transmission reliability - industry group fees Improve Reliability	N	$ 160	$ 160	$ 160	$ 480	
NERC and EMS Training Advanced Technology	N	$ 150	$ 150	$ 150	$ 450	
Roadway Access Improve Reliability	N	$ 150	$ 150	$ 150	$ 450	
New Position - Meteorologist (Weather Expert) Improve Storm Response	Y	$ 150	$ 150	$ 150	$ 450	Consolidation of weather data and elimination of duplicate efforts.
Medium Pressure Manhole Refurbishment Improve Reliability	Y	$ 150	$ 150	$ 150	$ 450	Decreased maintenance and reduction in unplanned outages.
Tower Painting Improve Reliability	N	$ 140	$ 140	$ 140	$ 420	
Training Specialist for TLM Training Programs Process Improvement	Y	$ 125	$ 125	$ 125	$ 375	Increased / improved training to improve operator response.
Transmission Planning Studies Advanced Technology	Y	$ 118	$ 118	$ 118	$ 354	More comprehensive and rapid studies
New Position - Scheduling District Operator (DO) Support Economic Growth	Y	$ 100	$ 100	$ 100	$ 300	Improved feeder scheduling and processing for improved efficiency.
1 Additional HR for NYISO functions Process Improvement	Y	$ 100	$ 100	$ 100	$ 300	Improved transmission feeder scheduling and processing for improved efficiency.
Training for Emergency CIG Enhanced Customer Service	Y	$ 100	$ 100	$ 100	$ 300	Increased / improved training to improve operator response.
Furnace Brook Lake Dam Maintenance Public Safety	N	$ 75	$ 75	$ 75	$ 225	
Emergency Drills Improve Storm Response	Y	$ 75	$ 75	$ 75	$ 225	Increased / improved training to improve operator response.
Conductor Cart Training - New Program Process Improvement	Y	$ 75	$ 75	$ 75	$ 225	Increased / improved training to improve operator response.
Update Plan and Profile Drawings - New Program Process Improvement	Y	$ 50	$ 50	$ 50	$ 150	Improved information to enhance operator actions.
Totals		$ 17,035	$ 17,085	$ 16,565	$ 50,685	

Substation O&M		RY 1	RY2	RY3	Total
Staffing Operator Augmentation for Existing Facilities	N	$ 36,313	$ 36,313	$ 36,313	$ 108,939
Staffing New Facilities - Mott Haven, Parkview, Rockview, Astor, Academy, York, Newtown	N	$ 4,701	$ 4,968	$ 5,502	$ 15,171
Facilities Betterment - Structural Integrity / Station Betterment	N	$ 2,000	$ 2,000	$ 2,000	$ 6,000

Cable Cooling System Maintenance	N	$ 880	$ 880	$ 880	$ 2,640		
Advanced Control Group - HMI / Digital Fiber Optics / Comp Sys	Y	$ 792	$ 842	$ 892	$ 2,526	Increased / improved training to improve operator response.	
Incremental Telecommunications (Conversion to Digital Fiber Optics)	Y	$ 480	$ 480	$ 480	$ 1,440	Improved communications and information to enhance operator actions.	
Flame Retardant Clothing	N	$ 355	$ 355	$ 355	$ 1,065		
Relay Resetting Magnetic Inrush	Y	$ 234	$ 234		$ 468	Reduced maintainance and unplanned equipment outages.	
SF6 Gas Emissions Reduction Program	Y	$ 200	$ 200	$ 200	$ 600	Reduced maintainance and equipment outages.	
Dynamic Feeder Rating System Maintenance	N	$ 165	$ 205	$ 245	$ 615		
Staffing for Field Operation Trainers	Y	$ 153	$ 153	$ 153	$ 459	Increased / improved training to improve operator response.	
Totals		$ 46,273	$ 46,630	$ 47,020	$ 139,923		

Operations O&M Support Economic Growth		RY 1	RY2	RY3	Total	
SMART Electric Technologies	Y	$ 425	$ 609	$ 701	$ 1,735	Improved data for decision making.
DSM Programs	N	$ 425	$ 425	$ 425	$ 1,275	
Maintenance associated with capital work (Energy Services)	N	$ 275	$ 275	$ 275	$ 825	
Customer Focused Service Ruling Program	Y	$ 244	$ 244	$ 244	$ 732	Improved data management and more rapid customer responsiveness.
Customer Survey - Load Reduction	Y	$ 150	$ 150	$ 150	$ 450	Improved data for decision making.
Totals		$ 1,519	$ 1,703	$ 1,795	$ 5,017	

Operations O&M Improve Reliability		RY 1	RY2	RY3	Total	
Maintenance associated with capital work (Network Reliability)	N	$ 5,488	$ 6,288	$ 6,938	$ 18,714	
Unit Substation repairs and inspection	Y	$ 2,325	$ 1,297	$ 1,214	$ 4,836	Equipment modernization - improved operational response.
Maintenance of Remote Monitoring System	Y	$ 1,956	$ 1,956	$ 1,956	$ 5,868	Equipment modernization - improved operational response.
Automatic Transfer Switch Operator Replacement	Y	$ 900	$ 900	$ 160	$ 1,960	Equipment modernization - improved operational response.
Totals		$ 10,669	$ 10,441	$ 10,268	$ 31,378	

Operations O&M Public Safety and Environment		RY 1	RY2	RY3	Total	
5-Year UG Structure Inspection Program	N	$ 35,001	$ 25,641	$ 25,641	$ 86,283	
Annual Stray Voltage Testing Program	N	$ 12,522	$ 13,023	$ 13,544	$ 39,089	
Mobile Stray Voltage Testing - Sarnoff devices	N	$ 10,883	$ 11,286	$ 11,705	$ 33,874	
Network Transformer vault cleaning program	Y	$ 5,486	$ 6,208	$ 6,208	$ 17,902	Improved equipment operation and access for improved operational response.
5 Year OH Inspection Program	N	$ 5,443	$ 5,661	$ 5,887	$ 16,991	
Dissolved Gas in Oil Analysis (DGOA)	Y	$ 3,725	$ 3,810	$ 3,847	$ 11,382	Improved information to enhance operator actions.
Central Quality Assurance	Y	$ 315	$ 315	$ 315	$ 945	Increased oversight to generate quality and productivity improvements.
Flush Facility Operations Resource Requirements	N	$ 228	$ 228	$ 228	$ 684	
Electric Distribution Inspection System (EDIS) Improvements	Y	$ 30	$ 30	$ 30	$ 90	Improved information to enhance operator actions.
Totals		$ 73,633	$ 66,202	$ 67,405	$ 207,240	

Operations O&M Storm Hardening and Restoration		RY 1	RY2	RY3	Total	
Line Clearance Program	Y	$ 13,755	$ 13,755	$ 13,755	$ 41,265	Removal of potentail hazards on a planned basis.
Maintenance associated with capital work (Non-network Reliability)	N	$ 6,377	$ 6,398	$ 6,360	$ 19,135	
Double Wood program	N	$ 5,235	$ 5,235	$ 3,510	$ 13,980	
Customer Response Program	Y	$ 418	$ 418	$ 418	$ 1,254	Improved information to enhance operator actions.
Danger Tree Removal	Y	$ 416	$ 416	$ 416	$ 1,248	Removal of potentail hazards on a planned basis.

Overhead Planning Group	Y	$ 131	$ 131	$ 131	$ 393	Increased oversight to generate quality and productivity improvements.
						Exhibit____ (HA-7)
						page 8 of 8
3-Phase Gang Switch Inspection and Repair program	Y	$ 101	$ 101	$ 101	$ 303	Equipment modernization - improved operational response.
Maintenance associated with capital work (Emergency Response)	N	$ 100	$ 100	$ 100	$ 300	
Emergency Equipment Management System	Y	$ 100	$ 100	$ 100	$ 300	Increased oversight to generate quality and productivity improvements.
Totals		$ 26,633	$ 26,654	$ 24,891	$ 78,178	

Operations O&M Process Improvement		RY 1	RY2	RY3	Total	
Electric Operations Project Management	Y	$ 7,834	$ 8,027	$ 8,027	$ 23,888	Increased oversight to generate quality and productivity improvements.
Electric Distribution Equipment Reconditioning & Repairs	Y	$ 1,018	$ 1,018	$ 1,018	$ 3,054	Equipment modernization - improved operational response.
Work Management System	Y	$ 1,000	$ 1,500	$ 1,500	$ 4,000	Increased oversight to generate quality and productivity improvements.
Electric Operations Process Management	Y	$ 800	$ 800	$ 800	$ 2,400	Increased oversight to generate quality and productivity improvements.
Maintenance associated with capital work (Engineering & other services)	N	$ 713	$ 713	$ 713	$ 2,139	
Field Auditing & Quality Control Program	Y	$ 563	$ 563	$ 563	$ 1,689	Increased oversight to generated quality and productivity improvements.
Engineering Contractor -Vendor Layouts	Y	$ 497	$ 575	$ 653	$ 1,725	Increase workforce flexibility from alternative resource.
Technical Support/NYC Regulatory Liaison Program	Y	$ 376	$ 376	$ 376	$ 1,128	Increased oversight to generate quality and productivity improvements.
Establishment of a Regional Contractor Oversight / Review Group	Y	$ 126	$ 126	$ 126	$ 378	Increased oversight to generate quality and productivity improvements.
NAICS Code Append	Y	$ 50	$ 50	$ 50	$ 150	
Totals		$ 12,977	$ 13,748	$ 13,826	$ 40,551	
Grand Total O&M Programs		$ 188,739	$ 182,463	$ 181,770	$ 552,972	
Total O&M Programs with Prodcutivity Potential		**$ 57,320**	**$ 58,104**	**$ 56,834**	**$ 172,258**	

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC9
Date of Response: 08/08/2007
Responding Witness: Rasmussen

Question No. :207
Please provide the RY 1, RY 2 and RY 3 increases in Con Edison's electric revenue requirement using the capital structure and ROR from the Joint Proposal in the Company's current gas case (Case 06-G-1332) that was filed with the Commission on June 1, 2007.

Response:

Imputing the capital structure and cost rates from the Joint Proposal in the Company's current gas case would result in revenue requirement increases in this electric case of $1,016,024,000 in Rate Year 1, $313,626,000 in Rate Year 2 and $363,759,000 in Rate Year 3 based upon the Company's May 4, 2007 filing.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC6
Date of Response: 07/13/2007
Responding Witness: Rasmussen

Question No. :180
The third page of your workpapers show the calculation of the $195 million that you label as the cost of plant added during the rate plan. The calculation seems to compare the current rate year forecasted Average Plant for RY3 to the RY3 plant that you now anticipate. Where in this filing does Con Edison recover the cost of excess plant added during RY1 and RY2 of the current plan?

Response:

Under the provisions[1] of the Joint Proposal adopted in Case 04-E-0572, the Company was directed to defer a carrying charge on variations between actual net plant added during the course of the rate plan and the net plant levels reflected in base rates. In RY1 and RY2 of the current plan, the Company's average net plant balance was higher than the levels reflected in rates (see attachment to City 181). The Company accrued carrying charges on the variation in plant balances for both years totaling approximately $198.7 million (RY1 = $60.0 million and RY2 = $138.7 million).

The Joint Proposal also contained a provision on page 10, under the section titled "Reconciliations" that provides for the following: "at the end of each Rate Year and subject to audit and prudence review, the Company may apply any available credits, except credits associated with TCC's, to offset the deferred balance." As a result of this provision, the Company was able to utilize available credits and fully offset the deferred carrying costs. Therefore the need to request recovery of this cost in the current case was extinguished.

[1] See page 11 of the Joint Proposal which discusses the procedures to be followed to reconcile transmission and distribution capital expenditures.

Exhibit ____ (HA-8)
Schedule 3

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC9
Date of Response: 08/08/2007
Responding Witness: Forecasting Panel

Question No. :209
What are the service classifications DSM delivery revenue adjustments for RY 1, RY 2 and RY 3 that correspond to the service classifications DSM energy sales adjustments provided in response to City Interrogatory 187?

Response:

See the attached file, NYC-209.pdf, for the delivery revenue impacts.

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
CASE 07-E-0523
New York City IR Set 09 - NYC-209

Estimated Impact of DSM Reductions on Delivery Revenues - Thousand $

Impact of DSM on Delivery Revenues - Thousand $

	Con Ed DSM Impact									Total Con Ed	Total NYPA
	SC 1	SC 2	SC 4	SC 5	SC 7	SC 8	SC 9	SC 12	SC 13	Revenue Impact	Revenue Impact
Annual 2007	(671)	(224)	(1,580)	(99)	0	(119)	(3,115)	(166)	(1,023)	(6,997)	(187)
Annual 2008	(2,233)	(640)	(4,340)	(132)	0	(295)	(10,626)	(320)	(2,067)	(20,653)	(411)
RATE YEAR SUMMARY											
RY1: 12 Me March 2009	(2,643)	(776)	(5,233)	(143)	0	(352)	(13,463)	(380)	(2,122)	(25,112)	(434)
RY2: 12 Me March 2010	(4,795)	(1,330)	(8,670)	(148)	0	(558)	(23,507)	(519)	(2,106)	(41,633)	(799)
RY3: 12 Me March 2011	(6,775)	(2,229)	(11,632)	(269)	0	(721)	(33,065)	(660)	(2,153)	(57,504)	(876)

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC1
Date of Response: 06/12/2007

Question No. :60

60. For the sendout forecast for Calendar Year 2007, 2008 and the three rate years ending March 31, 2011, please provide the following: a. The Econometric Model used for forecasting sendout; b. The historic inputs to this model; and c. The projections of these inputs, including any econometric models used to project that input.

Response:

a. The forecasting model for sendout is in the attachment City-Set01-Q60.xls.
b. The historical data for the sendout model are also in City-Set01-Q60.xls.
c. Projected values of the inputs are also in City-Set01-Q60.xls. The econometric model used for projecting the number of customers in SC 9 has been provided in response to Question 59c.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC5
Date of Response: 07/11/2007
Responding Witness: C. Hutcheson

Question No. :129
In response to City Interrogatory 22, you state that you were aware of one other alternative to recover negative net salvage. a. Could you please either further describe this alternative or provide a copy of a public document describing this alternative. b. You also state that this alternate approach is not used by the New York State Public Service Commission ("Commission"). Was it ever used by the Commission, perhaps for Con Edison's Gas Department? c. Are you aware of this alternative being used by any other state or federal utility regulatory commission(s)? d. Aside from intergenerational inequities and rate spikes, what are the other disadvantages of this alternative?

Response:

a) A copy of page 157 from the National Association of Regulatory Utility Commissioners publication entitled Public Utility Depreciation Practices is attached that generally describes the method I referred to in my response to City 22.

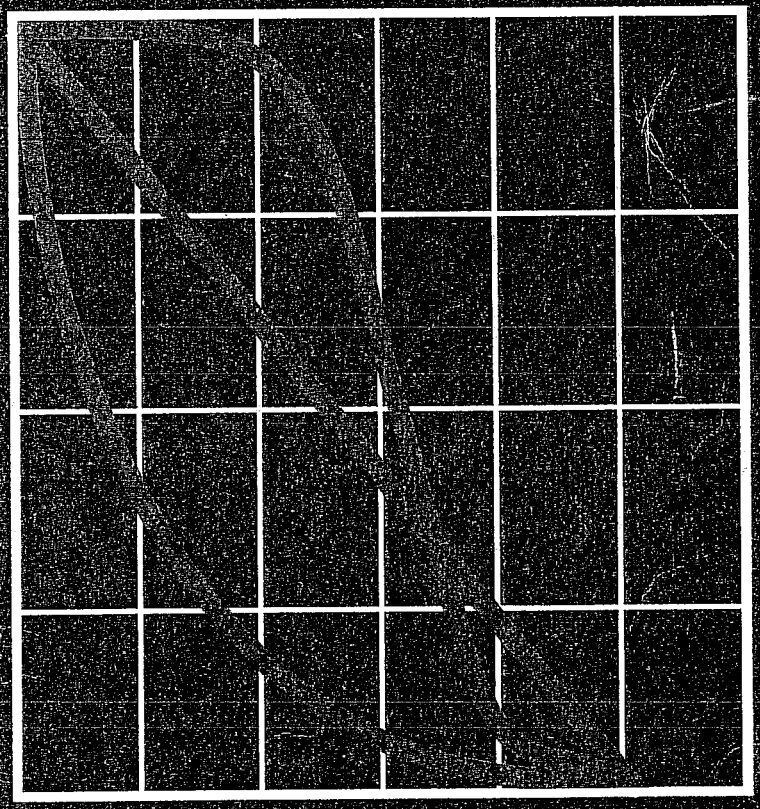
b) No. However, I would note that the method to depreciate the Company's steel and cast iron gas mains is a hybrid method that includes recovery for net salvage in the annual depreciation rate and caps that amount at a specific percentage of book cost retired. Charges in excess of that amount, if any, are transferred to expense. This hybrid method for this category has been in use by the Company and approved by the New York Commission for many years.

c) I am not aware of the specific hybrid method described in (b) above being used by other state or federal commissions, but I am aware that the regulatory bodies in New Jersey and Pennsylvania have removed the recovery of net salvage from the depreciation rate.

d) As I stated in my response to City 22, intergenerational inequities and rate spikes are the two major disadvantages of this alternative method to recover net salvage costs. Other disadvantages include, but may not be limited to, are:
    - Moving away from Generally Accepted Accounting Principles which seek to match revenues and expenses.

- Not allowing for use of anticipated, forward-looking factors to be applied to net salvage recovery rates.
- Pushing out the recovery of potential net salvage costs until after they are incurred, forcing a company to fund removal costs above those allowed in rates.
- Forcing customers to be burdened with the full cost of removing retired assets in a relatively short time period soon after retirement, instead of spreading the costs of removing assets over the relatively long life of utility plant.

PUBLIC UTILITY DEPRECIATION PRACTICES



CHAPTER XI

ESTIMATING SALVAGE AND COST OF REMOVAL

General

A general discussion of salvage and cost of removal is presented in Chapter III. Before discussing the process of analyzing and estimating these factors, a review of definitions and discussion of general principles is presented below.

When depreciable plant facilities are retired from service and physically removed, costs may be incurred and/or cash or other value may be realized if they are sold or retained for reuse. The abandonment of utility property in place can also cause costs to be incurred, (e.g., the cost of filling an abandoned gas pipe line with an inert gas). The term gross salvage refers to the amount received for retired property sold or junked, reimbursement received from insurance or other sources, or the amount at which reusable material is charged to a utility's Material and Supplies Account.[1] Cost of removal is the expenditure incurred in connection with retiring, removing, and dispersing of property. Net salvage is the difference between gross salvage and cost of removal.

Historically, most regulatory commissions have required that both gross salvage and cost of removal be reflected in depreciation rates. The theory behind this requirement is that, since most physical plant placed in service will have some residual value at the time of its retirement, the original cost recovered through depreciation should be reduced by that amount. Closely associated with this reasoning are the accounting principle that revenues be matched with costs and the regulatory principle that utility customers who benefit from the consumption of plant pay for the cost of that plant, no more, no less. The application of the latter principle also requires that the estimated cost of removal of plant be recovered over its life.

Some commissions have abandoned the above procedure and moved to current-period accounting for gross salvage and/or cost of removal. In some jurisdictions gross salvage and cost of removal are accounted for as income and expense, respectively, when they are realized. Other jurisdictions consider only gross salvage in depreciation rates, with the cost of removal being expensed in the year incurred.

Determining a reasonably accurate estimate of the average of future net salvage is not an easy task; estimates can be the subject of considerable discussion and controversy between regulators and utility personnel. This is one of the reasons advanced in support of current-period accounting for these items. When estimating future net salvage, every effort should be made to ensure that the estimate is as accurate as possible. Normally, the process should start by

[1] Regulatory agencies generally require that reusable material consisting of retirement units be salvaged at original cost, while minor items may be salvaged at current prices new. Some regulatory agencies take into consideration the fact that depreciation has been sustained.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/06/2007

Question No. :313
Subject: Projected Capital Expenditures In response to Staff's Recommendation #79 (Con Edison should file its current five-year capital budget with Staff within 30 days of the issuance of the Report) and Recommendation #80 (Con Edison should file a detailed five-year capital budget with the Commission within 30 days of the issuance of this Report, and subsequently by March 1 of each year until further notice) contained in Staff's LIC Report on the 2006 Power Outages in Con Edison's Long Island City Network, the company provided a response on March 8, 2007. That response is included as an attachment to this information request with the filename: DPS-313 R-79-80 5 year Capital Budget and Details. In a presentation made to Staff on April 30, 2007, the company presented, among other items, a five-year capital expenditure budget that reflected the capital expenditure budget to be included in the current rate filing. The budget included in that presentation is attached to this information request with the filename: DPS-313 Con Ed Rate Case Capital Budget Presentation. a) Confirm if the budget provided in response to the LIC Report recommendations was approved by the company's Board of Directors. If yes, on what date? b) Confirm if the five-year capital budget included in the rate case was approved by the company's Board of Directors. If yes, on what date? c) Provide a detailed reconciliation, on a project-by-project basis, between the five-year budget provided in response to the LIC Report recommendations and the five-year budget included in this rate case and include a detailed justification for any differences between the two. d) Explain the company's capital budgeting process in detail. e) Explain the specific aspects of the company's capital budgeting process that influenced the significant changes from the assumed-to-be-current capital budget provided to Staff on March 8, 2007 to the company's capital budget presented on April 30, 2007 that was ultimately included the company's rate filing.

Response:

A) The Company's Board of Directors does not approve a five year capital budget. Rather, it annually approves a one year capital budget, i.e., for 2007, and reviews an additional 4 year capital plan, i.e., 2008 -2011. These presentations were made to the Board of Directors on January 18, 2007.

B) See response to a.

C) See attached.

D) See attached Corporate Instruction.

E) The Company's capital budget is a revolving and evolving 5 year plan. This plan is prepared based on the most current information available on the condition of the system and the required improvements to meet the Company's objective of providing safe and reliable service at a reasonable cost. Every year the plan is updated and revised to address current conditions and needs. This process provides the flexibility needed to ensure that the most pressing issues affecting the safe and reliable operation of the system are addressed as promptly and efficiently as possible. Some aspects that require revision to the capital plan are as follows:

Status of ongoing capital projects. The completion schedule and hence the cash flow of these projects may be affected due to equipment/station outage schedules, larger than anticipated scope of work, higher cost estimates and cash flow requirements, permitting, site selection and a myriad of administrative, technical or construction issues. Adjustments in the capital plan are often needed to accommodate some of these project constraints.

New projects identified during the year that were not covered in the 5-year plan are included based on their relative importance.

Changing priorities. Depending on the nature of the project regarding its importance to Environmental, Health and Safety, Regulatory Compliance and plant reliability, the schedule and the projected cash flow are adjusted.

Equipment and outage schedule. Some projects, e.g., major boiler equipment upgrades require prolonged equipment or plant outages. In some cases prolong outages can't be scheduled as anticipated and rescheduling of the projects is necessary.

The outer years of the five year plan are more uncertain because of the difficulty in projecting the needs of the system and stations well into the future, particularly when dealing with an extremely large, complex and dynamic system. The projects presented to the Board for the outer years are generally in one of three categories: (1) general concepts -- as we begin our engineering and design of the project, (2) Order of Magnitude Scope and estimates -- more information becomes available to develop greater work details, for example, general arrangement drawings, or (3) at mid-point of the process, when the project is ready for Construction scopes & estimates and the construction project is released for bid. The three project phases of determining the scope/estimate (concept, OOM, construction) could occur over a few months or even a few years, depending on the size of the project. As these outer years are pulled in, the projected projects and cash flow more closely reflect the need of the Company.

As stated above, demand load growth, reliability, public safety and environmental issues are the influences and driving factors and prioritization of work plans determine the budget allocations.

Transmission & Distribution
2008 Rate Case Projects/Programs

			Rate Case Period 2008-2010	Variation to Plan	
Load Relief/Load Growth					
	Transmission	E. 13th Street Load Pocket	$ 182	$ 182	New project related to retirement of NYPA unit
	Substation	Newtown	120	100	Accelerated service date to 2011
		Westside	260	48	Higher cost due to real estate estimate of available property
		Generation Interconnection	60	40	New project due Astoria East Substation
	Distribution	New Business	430	78	Increased levels of New Business activity was experienced in the last quarter of 2006 and into 2007 for both large and small developments that were not included the original request nor anticipated. Given this level of activity and looking forward at the many growth opportunities in our service territory (i.e Hudson Yards, Javits Expansion, Atlantic Yards) we anticipate new business spending levels to be consistent with the 2006.
		Newtown	13	11	Accelerated service date to 2011
		Equipment Purchases (Transformer & Meters)	241	82	Supports new business increases and transformer relief accelerations by 2012
	All	Other	869	40	Variation due to increased scope of several load relief transfers, accelerations of overhead transformer relief, and modernization of distribution unit substations
	Total Load Relief		**$ 2,175**	**$ 581**	
Reliability					
	Transmission	179th Street Reinforcement (Fdr M29)	222	55	Timing delays due to permitting delays.
		Replace 138KV Feeders 18001 & 18002	53	29	Increased scope to convert to solid dielectric; delayed initially due to re-prioritization
		Replace Feeder 69M41 & 69M45	38	38	Increased scope
		Vernon - 38M72 Upgrade	21	21	New project related to retirement of NYPA unit
		Replace Feeder M51	20	20	Emerging issue that will evaluate analysis which identified sections most likely prone to failure
	Substation	Replace Overdutied and Obsolete Circuit Breakers	74	7	Expanded program, most of increase to help reduce SF6 gas emissions
		Substation Relays and Equipment Upgrades	95	25	Expanded program, including high voltage test sets
	Distribution	Overhead Reliability	76	43	Storm Hardening - New programs to increase overhead reliability (auto loop, aerial cable, ESCO switch, new programs - rear lot pole, overhead feeder reliability, 4kV sectionalizing, 3 phase gang switch)
		Cable Crossing (Riverdale & Flushing)	32	32	New project
		Network Transformers	277	151	Accelerated transformer relief to 100% by year 2012
		PILC Replacements	118	46	Accelerate PILC elimination to year 2020 (from 2024)
		Underground Secondary Reliability	481	38	Includes service box cover replacement program
		Remote Monitoring Transmit Pressure Temperature/Oil	92	39	Accelerate RMS 3rd generation
		Coastal Storm Risk Mitigation	21	21	New program - install "flood switches" & replace non-submersible equipment in flood zones.
		Network Reliability	70	70	Feeder de-bifurcation in various networks
		Street Light Isolation Transformers	18	18	4 year program to eliminate expected stray voltage conditions
		Technology Enhancement Projects	92	80	New projects (Secondary Monitoring - Secondary Model Validation, Work Management Project Tracking)
		Equipment Purchases (Transformer & Equipment)	224	88	Supports reliability programs underground (banks off, candidates for replacement (CFR's) and overhead programs.
	All	Other	939	56	Increase mostly due to cable replacement and acceleration of substation reliablity to mitigate outages.
	Total Reliability		**$ 2,963**	**$ 877**	
Electric Production			**$ 115**	**$ 16**	
Telecom			**$ 4**	**$ (0)**	
Total Transmission & Distribution			**$ 5,257**	**$ 1,474**	

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC1
Date of Response: 06/11/2007

Question No. :22
Regarding the recommended large net negative salvage for several of the accounts on Exhibit 25, are there alternate means of reimbursing the utility for these salvage costs that do not require ratepayers to "prepay" for the cost. If there are such alternatives: a. Please describe them; b. Are you aware of such alternative being used by the New York Public Service Commission for any steam, gas, electric or water companies under its jurisdiction; and c. What are the advantages or disadvantages of these alternative means?

Response:

a) Yes, I am aware of one other alternative which would require the recovery of salvage costs after they are incurred.
b) I am not aware of this alternative being used by the New York State Public Service Commission.
c) While the alternative avoids the need to estimate future expenses, it creates intergenerational inequities and rate spikes, among other disadvantages.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC1
Date of Response: 06/12/2007

Question No. :61
Explain how forecasted levels of DSM were removed from the sales, revenue and sendout forecasts.

Response:

The forecasted levels of DSM were manually subtracted from our model results. The resulting forecasts, net of DSM, were then flowed through our pricing models to determine the revenue forecast.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC1
Date of Response: 06/12/2007

Question No. :62
Explain why historic levels of DSM were not removed from the inputs to the sales, revenues and sendout forecasts and what the impact on the forecasts would be if the historic levels of DSM had been removed.

Response:

The historic levels of DSM are reflected in the historical sales, sendout and revenue data used to produce the econometric models. Therefore, a base level of DSM reductions is already assumed in the model forecasts. The model forecasts have been adjusted to only reflect the level of DSM that is incremental to this base level.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC2
Date of Response: 06/15/2007

Question No. :84
The testimony in a variety of places says or implies that many of the capital and O&M actions proposed will reduce O&M costs. The testimony cites less failures (assuming a failure increases O&M), less expensive, less non custom made replacement parts, less maintenance issues, less operational problems, better worker coordination, more efficient processing, more efficient permitting processes and so forth. While not meant to be an exhaustive list, these phrases, or their equivalents, can be found on pages 50, 51, 52, 53, 54, 55, 58, 59, 60, 62, 64, 76, 84, 85, 88, 101, 109, 110, 128, 139, 142, 143, 145, 147, 148, 167, 168, 183, 184,185, 186, 189, 190, and 191. Please explain how the three Rate Year forecasts presented by the Accounting Panel and Exhibit 24 reflect these cost reductions.

Response:

To the extent any O&M project in Rate Year 1 is expected to reduce O&M costs for a particular activity, the revenue requirement for Rate Year 1 reflects such reduced costs for that activity.

O&M expenses for Rate Years 2 and 3 for the proposed three-year rate plan reflect the Rate Year 1 O&M costs (except as specifically identified on Exhibit ___ (EJR-)(e.g., pensions/OPEBs), as adjusted by an imputed net 1% productivity factor.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC5
Date of Response: 07/11/2007
Responding Witness: Infrastructure Investment Panel

Question No. :155
Please provide the 2007 Electric Operations and System and Transmission Operations initial budget requests as submitted for approval by each manager for Capital or O&M projects or programs in priority funding order, as well as the final approved 2007 Capital and O&M budgets.

Response:

The Company objects to the request for budget requests submitted by each manager on the grounds that it is unduly burdensome. See attached.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC5
Date of Response: 07/12/2007
Responding Witness: Infrastructure Investment Panel

Question No. :179
On pages 183-186 of your testimony you describe the "Edison Program." a. Describe the Computer Aided Lean Management methodology ("CALM"). b. Please provide an analysis of the proposed Integrated System Model ("ISM") program along with a detailed cost-benefit analysis for this $8.5 million project. c. Please provide an analysis of the proposed Decision Support System ("DSS") program along with a detailed cost-benefit analysis for this $4.5 million project. d. Please provide an analysis of the proposed Grid Optimization program along with a detailed cost-benefit analysis for this $54 million project.

Response:

a) A "Lean Management" system seeks continuous improvement in performance using "Computer Aided" optimization that produces preventive rather than reactive operations and maintenance. Such a proactive, CALM methodology requires advanced computational learning systems that produce continually recomputed "Grid Optimization" through simulations using an "Integrated Systems Model", and feedback loops using operator-friendly "Decision Aids". The goal of CALM is to use rigorous software enforcement of such feedback loops to first predict outcomes and then make corrections based upon objective scoring of the predictions versus actual events. The CALM Program at Con Edison will use advanced modeling techniques, stochastic optimal control, option theory, and machine learning to build a software support system that enforces the optimization of customer and engineering objectives simultaneously and under uncertainty. Actions are tracked, scored, and improved based on CALM's empirical methodology. Columbia University has estimated a Return on Investment (ROI) of at least 5:1 for this type of CALM investment based on their experience with implementations in field intensive industries worldwide (see their CALM series for the oil and aerospace industries for comparable savings at http://leanenergy.ldeo.columbia.edu/ogj).

b) The Integrated System Model (ISM) is intended to increase operational efficiency by creating a common data and simulation model of the assets and work activities performed by Con Edison. The main goals of this five-year project are to improve efficiency, provide transparency into all aspects of operational activities, break down

organizational silos and provide advanced analytic tools to enable a process of continuous improvement. The ISM improves business efficiency by documenting and mapping the various work processes throughout the company, to better understand how the various parts of the organization interact and communicate. The goal is to automate inefficient processes via automated tools that control the flow of work through many of the company's processes. These tools permit significant paper reduction, reduced miscommunication, and provide task monitoring and data collection to permit continued analysis and process improvement. Initial benefits of these planning and scheduling tools will include better forecasting of capital expenses, materials, and labor thereby generating ROI through cost savings. Columbia University has estimated a ROI of at least 3:1 for this investment based on their experience with CALM implementations in field intensive industries worldwide (see their CALM series for the oil industry for comparable savings at http://leanenergy.ldeo.columbia.edu/ogj). These savings come from 5 major implementations:

1) **Improved Business Efficiency** is improved by documenting and mapping the various work processes throughout the company in order to better understand how the various parts of the organization interact and communicate. Although the goal is to automate many processes, efficiency can be gained by simply seeing where bottlenecks occur and relieving them through conventional means. Such provided an early positive Return On Investment (ROI).
2) **Process Management** provides automated tools that control the flow of work through many of the company's processes. These tools permit significant paper reduction, reduce miscommunication, and provide task monitoring and data collection to permit continued analysis and process improvement. These tools assist the planning process, permit supervisors and workers to see what tasks are planned and when they are expected to be executed, and track the execution and provide for simple interfaces to re-plan and reschedule work when needed. Initial benefits of these planning and scheduling tools include better forecasting of capital expenses, materials, and labor thereby generating ROI through cost savings.
3) **Schedule Optimizer** for the scheduling process further drives out inefficiencies and achieve better utilization of material, personnel and one of Con Edison's most valuable resources, preventive maintenance via scheduled instead of emergency outages. Southwest Airlines provides a classic example of better performance from better scheduling.
4) **Integration** extends the ISM tools to the broader company and continues the process of incorporating analysis and predictive tools developed in other parts of the overall Edison Project. This enhances the existing analytic tools and places more information in the hands of those most able to benefit.
5) **Business Risk** integrates business intelligence and the simulation tools that model the electric grid and the power flows to customers in order to decrease business risk (defined here as the product of the probability of equipment failure and the size of the impact on the customer base). Minimizing business risk in the

evaluation and optimization of schedules will raise the effective utilization of the scarce "scheduled outage" resource.

c) A next-generation Decision Support System (DSS) will provide Decision Aids for control rooms to migrate Con Edison to an intelligent system by utilizing Machine Learning tools and optimization techniques familiar to control rooms of other industries that specialize in systems engineering. A "decision engine" is used to analyze variances from expected performance, group them into recognizable system problems, and propose an optimized list of possible solutions to operators in control centers. Feedback loops are set up to measure the outcomes of important decisions, and to feed the Machine Learning system to provide continuous improvement. Costs and benefits are then analyzed via activity-based accounting to optimize and manage resources, costs, and performance, continuously. Savings come from the reduction in emergency "burnout" events such as primary feeder Open Autos, manhole fires, stray voltage, and transformer failures. Columbia University estimates the ROI from these next generation Decision Aids to range from 5:1 for prevention of individual component failures through preventive maintenance to the prevention of major blackout events caused by cascading, multi-contingency failures that have enormous costs and dangers for the citizens of New York City. This ROI is accomplished in 4 major projects:
   1) **Real time Analysis** measures load pocket distribution between transformers and their nearby supporting infrastructure, power quality transients, and SCADA load information are fed to the Machine Learning system and alerts are pushed to the operators in control centers.
   2) A **Decision Optimizer** provides a rules engine to analyze variances from expected performance, group them into recognizable system problems, and propose an optimized list of possible solutions to operators in control centers.
   3) **A Business Intelligence** layer creates feedback loops to measure the outcomes of important decisions, and to feed the Machine Learning system to provide continuous improvement in the Decision engine running the Decision Aids System.
   4) **Business Management** tracks costs and benefits via activity-based accounting to then optimize the business and manage resources, costs, and performance continuously.

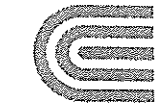
d) First, please note that this is a $5.4 million project, not $54 million as indicated by the question. The purpose of Grid Optimization is to develop next generation monitoring and control software systems that will cooperate with each other to keep the system closest to its most effective operating point and reduce the frequency and duration of excursions into operating conditions where the system is more failure prone and less efficient in delivering electricity to customers. This requires the development of a Machine Learning system that monitors and controls the distribution system through a set of distributed, autonomous controllers that optimize the safety, reliability, and efficiency of the electric system using Reinforcement Learning. The controllers utilize dynamic programming methods to compute real options for operational actions and policies governing those actions simultaneously using a single algorithm. The

core of our effort is to build stochastic adaptive controllers that provide the ability to adapt to a changing environment, tolerate uncertainty, and optimize their control actions based on uncertainty of its inputs. Customers benefit directly from optimal performance of the electric grid through better energy management between and among electricity consuming appliances and services communicating via Automated Meter Intelligence (AMI). Columbia University estimates ROI for customers in New York City of at least 3:1, based on savings being realized by experiments carried out in California and the Pacific Northwest. This ROI is achieved through 4 major projects:

1) A **Reinforcement Learning** simulation environment is used to explore and test a variety of concepts related to the development of better operational policies. Key to RL is the construction of feedback from the operating system into the RL controller that determines optimal policies for operating the "Smart" Grid.
2) A **Smart Controller** uses the simulator to begin incorporating operations, first in shadow-mode, then in prototype testing, and finally in operational deployment.
3) **Infrastructure Development** creates a distributed control system with much smaller controllers responsible for local control. These local controllers are programmed with adaptive agents that can use RL to learn how best to control their immediate environment, while at the same time making optimal contributions to meet global performance objectives.
4) **Distributed Assets** are deployed as the RL controller learns how to manage optimal performance for first a network, then a borough, then city-wide, and finally regionally. If successful, the Smart Controller will form the basis of the next generation electric grid in New York City.

Project: EAST 13TH STREET LOAD POCKET

Description	Cost
Purchased Equipment	43,025,700
Material & Supplies	6,037,100
Construction Contract	40,013,200
Company Labor	12,658,800
Other Direct Cost	5,230,800
Overheads and Contingency	75,034,400
Estimate	182,000,000



CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
4 IRVING PLACE
NEW YORK, NY 10003

DISTRIBUTION ENGINEERING DEPARTMENT
SECONDARY SYSTEM ANALYSIS

SPECIFICATION EO-10359
REVISION 2
April, 2007

PERIODIC UNDERGROUND DISTRIBUTION STRUCTURE INSPECTIONS

FILE: OPERATION AND MAINTENANCE OF EQUIPMENT, MANUAL 1
SECTION 13 REPAIRS AND MISCELLANEOUS TESTS

TARGET AUDIENCE	ELECTRIC CONSTRUCTION REGIONAL AND DISTRIBUTION ENGINEERING

NESC REFERENCE	214 A 2, 4, 5 311 A, 312 313 A 2, 4, 5

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TABLE OF CONTENTS

Periodic Underground Distribution Structure Inspections

1.0 PURPOSE

1.1 This specification describes periodic underground distribution structure inspections to comply with the Public Service Commission's Electric Safety Standards issued in Case 04-M-0159 for the following:

1.1.1. All underground electric distribution structures such as Manholes, Service Boxes and Vaults.

1.1.2. All Cable, Joints, Switches, T-taps, MTS, Pad mounted, etc. contained in underground distribution structures and underground residential distribution (URD) structures.

1.2 All work and operating procedures shall be in accordance with the provisions of the "General Instructions Governing Work on System Electrical Equipment, "General Instructions Governing Work on Overhead and URD System Electrical Equipment" and the "General Rules and Regulations".

2.0 APPLICATION

2.1 All Underground, I&A Services, I&A Networks, Construction Services, Special Forces, Field Engineering, Quality Assurance and designated personnel that enter electric distribution structures including, manholes, boxes, and vaults that contain/support primary or secondary cables and/or equipment.

3.0 WHEN TO PERFORM AN UNDERGROUND INSPECTION

3.1 **Con Edison Facilities** - An Underground, I&A Services, I&A Networks, Construction Services, Special Forces, Field Engineering, Quality Assurance and designated personnel shall perform an underground inspection on/in every distribution structure that the crew enters to perform work. All crews entering underground structures shall follow approved manhole entry procedures in CSP 17.01, including testing for stray voltage (See Section 6) and shall conduct the physical inspection at the time of initial entry into the structure. The documentation of the inspection shall be completed prior to leaving the location. If a structure inspection has been documented within the last 7-days, another documented inspection is not required. (See 3.2 for Network Equipment Vaults) If a repair is made, then an inspection shall be documented, regardless if 7-days have not passed. The crew shall test the structure for stray voltage at the conclusion of work in the structure and at the end of each work period before leaving the site, unless relieved by another crew (see Section 6).

3.2 **Network Equipment Vaults** – The requirements to perform the UG Structure Inspection (EO-10359) is to be done only at the time of a CINDE Inspection EO-10110. Inspections are either "Test Box" or "Visual", both apply equally. The 7 day rule per Paragraph 3.1 in EO-10359 does not apply to Network Equipment Vaults.

3.3 **Scheduled or Targeted Underground Inspections** – A Scheduled inspection is conducted to ensure that a structure is inspected on its 5-year cycle. A Targeted inspection is conducted as part of the secondary upgrade program.

3.4 **Customer Facilities** - Inspections of customer manholes or customer service boxes are not required. However, if a defect is identified in/on customer structures they should be reported to Energy Services for follow-up with the customer.

4.0 TYPES OF INSPECTIONS

4.1 **Underground Inspection** – An inspection of an underground distribution structure, such as service boxes, manholes, pull boxes, vaults, URD, PME, etc. and the electric equipment contained in the structure that are not normally buried. The inspection shall be performed in accordance with Paragraph 7.0.

4.2 **Critical Manhole Inspection** - Critical manholes are electric distribution underground structures where, if problems occurred, could have a major impact on the distribution system. Depending on operating region, examples of critical manholes are: the first feeder manholes leaving a substation, structures with three (3) or more feeders serving the same network, structures with more than three (3) network feeders serving more than one network and other structures selected by the Region's Manager of Electric Operations Engineering. Annually, each Region's Manager of Electric Operations/Engineering should establish and issue the list of critical manholes in the region and then have these structures identified as critical manholes.

4.3 **Joint Regulator Inspections** – see EO-6141 or **Exhibit D** for illustration.

5.0 INSPECTION CYCLE

5.1 The underground inspections should be conducted according to the following schedule:

5.1.1. Underground Inspection – Every 5 years.

5.1.2. Critical Manhole Inspection – Every 3 years.

5.1.3. URD Pad-mounted Equipment (single and three phase transformers, T-Taps and P.M.E. switches) – Every 5 years.

5.1.4. URD Submersible Transformers (single and three phase) – 6 months after initial installation, then every 5 years.

5.1.5. Manholes with Joint Regulators – see EO-6141 for cycle.

6.0 STRAY VOLTAGE TESTING DURING INSPECTIONS AND DURING WORK IN UNDERGROUND STRUCTURES

6.1 All crews entering underground structures for any purpose shall follow approved manhole entry procedures in CSP 17.01, including testing for stray voltage. The crew shall also test for stray voltage at the beginning of work in the structure and at the end of each work period before leaving the site, unless relieved by another crew. All crews completing an UG Inspection Form are not required to fill out the back of the Daily Crew Activity Report (DCAR) for Stray Voltage. The UG Inspection Form provides this data into EDIS.

6.2 Testing for stray voltage shall be conducted according to Bulletin #63.

6.3 Stray voltage testing includes a test of the exterior surfaces (cover and rim) of any distribution structure, such as manhole covers, service box covers, vault gratings and URD equipment; Stray voltage testing inside the structure includes a test of the metallic jacket of any primary, secondary or service conductor and the accessible metallic duct.

7.0 FILLING OUT THE UNDERGROUND INSPECTION FORM

7.1 Underground distribution structures should be inspected by visual examination of the structure and its equipment to identify conditions that can cause or lead to safety hazards or adverse affects on the performance of the structure or equipment. These conditions are listed in the "Periodic UG Distribution Structure Inspection Form" (EO-10359). See **Exhibit A** for illustration.

7.2 The sections in the form are:

7.2.1. The Header

7.2.2. Stray Voltage Section

7.2.3. UG Sections 1 to 5

7.2.4. The B-Ticket

7.3 **The Header:** The Header Section information is extracted automatically by the system for a Scheduled, Ad Hoc and Previous inspection. In the case that the user wants to print out a "Blank Inspection Form" the Header information will not be shown and must be type it in.

The Header information consists of the following fields:

7.3.1. The inspection type: type of inspection that will be use

7.3.2. Form name: name of the current form used

7.3.3. Asset #: the number of the structure

7.3.4. Asset Type: type of structure

7.3.5. The Region in which the structure is located

7.3.6. M&S Plate: plate number of the structure

7.3.7. Location: location of the structure relating to the street or sidewalk

7.3.8. Inspection Date

7.3.9. Inspection Performed By

7.3.10. Employee #:

7.3.11. Company Code

7.3.12. External Employee First Name

7.3.13. External Employee Last Name

7.3.14. External Organization

7.4 Stray Voltage Section:

7.4.1. **If Stray Voltage is found, report it to Call Center or Control Center**; this is a statement

7.4.2. **Did you find Stray Voltage before and/or after doing the job?** Shall be marked as:

a. No Stray Voltage

b. Not Required

c. Asset Not Found

d. No Access

e. Stray Voltage Repaired

If the structure has been found with stray voltage, protect the location and report to The Control Center. The C.C. shall initiate an ECS ticket with a trouble type of ENE. The field crew and Control Center shall coordinate the collection of the information necessary in Bulletin #48. The field crew shall begin troubleshooting activities. When the stray voltage condition has been found and repaired, this question shall be marked "Stray Voltage Repaired" and also shall enter the B-Ticket number.

7.4.3. **Enter the B-Ticket number,** If stray voltage is found and repaired, enter the B-Ticket number.

7.4.4. **What is the current weather?** Shall be collected, answers:

a. Cold
b. Fair
c. Freeze
d. Foggy
e. Hot
f. Rain
g. Snow
h. Thaw
i. Windy

7.5 **UG Section 1:**

7.5.1. **Structure Access Restrictions: Record tag or flush number below and stop, otherwise continue;** this is a statement.

7.5.2. **Is there a Structure Access Restriction?** If you found a restriction before entering the structure, shall answer: Yes or No, if you answered "**Yes**", enter the restriction below:

a. Enter the D-Fault number placed or found (EO-1184)
b. Enter the Environmental Tag number placed or found (GEI 2.00, 3.00)
c. Enter the Flush number (GEI 4.00)

7.5.3. **Enter the D-Fault number placed or found** (EO-1184), if the structure has been found with a D-Fault tag, do not enter the structure, and refer to (EO-1184) for appropriate action. No ECS ticket needs to be created as a result of this inspection. This question shall be marked as "**Yes**", the D-Fault Tag number shall be recorded the inspection form saved and the inspection shall cease.

7.5.4. **Enter the Environmental Tag number placed or found** (GEI 2.00, GEI 3.00). An environmental condition previously identified in the structure or observed during the inspection. Refer to the General Environmental Instructions or (GEI 2.00, GEI 3.00) for appropriate action. If the structure has been found with an environmental condition this question shall be

marked as "**Yes**", the Environmental Tag number shall be recorded, the inspection form saved and the inspection shall cease.

7.5.5. **Enter the Flush number** (GEI 4.00), if the structure requires a flush due to the presence of liquids and/or debris that prevents to conduct a full and complete visual inspection, the flush shall be asked to the appropriate department. This question shall be marked as "**Yes**" and the flush number shall be recorded, the inspection form saved and the inspection shall cease.

7.6 **UG Section 2:**

7.6.1. **UG Structure reason for visit?** Shall be marked as shown:

a. A Scheduled or Targeted inspection, when conducted as part of the upgrade program or to ensure the structure is inspected on cycle.

b. Critical Manhole Inspection, conducted as part of the Critical manhole program.

c. An Ad-Hoc Inspection (Incorporated into Routine Work), inspection not in the route sheet, conducted in conjunction with regular work within the structure.

d. Repairs or Follow up to previous inspections.

7.6.2. **What is the Cover Type?** Type of cover on the structure, answers:

a. Vented

b. Vented New

c. Grating

d. Solid Metallic

e. Solid Nonmetallic.

7.6.3. **Where is the Asset (Structure) located?** Location of the structure, answers:

a. Street

b. Sidewalk

c. Backyard

d. Curb

e. Private Property.

7.6.4. **Is a Joint Regulator present?** The joint regulator is used in cables that are

maintained and pressurized by oil, see **Exhibit D** for illustration. Answers: Yes/No/Serviced.

7.6.5. **Qualified personnel fill out the forms in EO-6141;** this is a statement.

7.7 UG Section 3 Tier 1-A:

7.7.1. **(Tier 1-A Defects) You must repair these items before leaving location; if a Barrier is installed create a B-Ticket;** this is a statement.

7.7.2. **Did you make a Tier 1A repair?** If you found a Tier 1-A defect in the structure, answers: Yes or No, if you answered "**Yes**", complete the questions below:

a. Cable or crab in contact with frame or cover (BI = Barrier Installed)

b. Improperly sealed secondary end caps?

c. Unsealed ducts (EO-1100) (EO-6217-C)

7.7.3. **Cable or crab in contact with frame or cover (BI = Barrier Installed),** answers: No or Barrier Installed. A secondary or service conductor cables/ crabs found in contact or within 6" of the structure cover or frame. If they can be reshaped to eliminate the contact this question shall be marked as **"No".** If reshaping cannot be done, install a barrier, if a Barrier is installed this question shall be marked "**BI**". See **Exhibit C** for installation demonstration.

All structures in which the insulating barrier has been installed will require a B-Ticket creation for a Structure Conductor Upgrade and an enlargement review, use ECS code "SIP". Also in **UG Section 5 Tier 2** the question: Is a Structure Conductor Upgrade required? (Cut and Rack), shall be marked "Yes".

7.7.4. **Improperly sealed secondary end caps?** Answers: No/Repair.

a. If secondary/services cables/crabs are found with the ends not protected in accordance with EO-2509-C, they shall be repaired upon discovery and this question shall be marked **"Repair".**

b. Service crab-joints with the vinyl cable caps (i.e. Yellow, Black) covering the open ends are considered an improperly sealed cable end and must be repaired and this question shall be marked **"Repair".**

7.7.5. **Unsealed ducts (**EO-1100) (EO-6217-C), Answers: No/Repair. A duct not found according specs, shall be sealed during the inspection and this question shall be marked **"Repair".**

7.8 **UG Section 4 Tier 1-B:**

7.8.1. **(Tier 1-B Defects) Repair on location or initiate detailed B Ticket for follow up; use ECS code "SIP"**; this is a statement.

7.8.2. **Damaged primary feeder cable and joints, C-Faults and D-Faults (EO-1184) must be reported to Control Center;** this is a statement.

7.8.3. **Did you make a Tier 1B repair or does it require follow up for repair?** f you made a Tier 1-B repair or require follow up to repair, complete the questions below. Answers: No/Repaired/Yes.

a. Structure/Equipment Damage, Cover Damage/Clogged, Needs Regrade

b. Sump Pump inoperable/ungrounded (EO-12160-C)

c. Exposed conductor/visible burnouts

d. Damaged neutral cable/connections

e. Damaged Secondary Services / Mains / Crabs / Splices

7.8.4. **Structure/Equipment Damage, Cover Damage/Clogged, Needs Regrade**, answers: No/Repaired/Yes.

a. A structure condition with large cracks in walls or ceiling, defective steel support beams or bars, any evidence of oil leaking, any corroded part or attachment like gauges, tank and fins.

b. A structure that requires an enlargement.

c. A vented cover with the holes clogged that cannot be cleared.

d. A structure cover/grating found cracked, unbolted, damaged, above or below grade.

e. A structure shifted or improperly placed broken baffles, damaged elbows, doors, hinges, latch and locks that do not close.

f. In URD damaged primary elbows, corroded box, HV and LV Bushings, missing test points/caps, Micarta supports, tags and fault indicators, etc

When the structure or equipment within has been determined to require follow up in any of these conditions, the question shall be marked **"Yes"**, and an ECS ticket shall be generated with a trouble type of SIP. This ticket should be office completed and receive a DOCS referral to the organization responsible, such as Sub-Surface Construction (SSC) or Construction Management (CM) for further evaluation of the required work. Do not refer these ECS tickets as "FYI". This department should evaluate the required work. Examples of appropriate DOCS referral codes are:

Region	Work Code	Queue
Brooklyn	ES0007	BEC2CMAVL
Queens		QECESINBOX
Staten Island		S.CAI.BT
Manhattan		MI.ES.BT
Westchester		NSSS
Bronx		NSSS

7.8.5. **Sump Pump inoperable/ungrounded** (EO-12160-C), answers: No/ Repaired/Yes. If the sump pump does not operate or the pump is found improperly grounded this question shall be marked "**Yes**." If the sump pump or grounding is repaired shall be marked "**Repair**", or if the structure do not have a sump pump, shall be marked "**No**."

7.8.6. **Exposed conductor/visible burnouts**, answers: No/Repaired/Yes. A condition where secondary or service cables are burning or conductor is exposed. They must be repaired immediately or referred to Control Center for repair. If the condition has been referred to the Control Center, the question shall be marked "**Yes**". Do not refer these ECS tickets as "FYI". Examples of appropriate DOCS referral codes to the Control Center are:

Region	Work Code	Queue
Brooklyn	DS0002	B.DISP
Queens		QECBTEM
Staten Island		N/A
Manhattan		Change trouble type on ECS ticket to RDSSIP
Westchester		WECC
Bronx		WECC

7.8.7. **Damaged neutral cable/ connections**, answers: No/Repaired/Yes.

a. A condition where the neutrals do not have the proper number of indents.

b. The bonds are broken on lead mains or services, damaged neutral bus, exposed or connections are broken apart.

c. The aluminum cables are not connected in accordance with EO-5403.

These conditions shall be repaired upon discovery and this question shall be

marked "**Rep**". If repairs are not possible at the time of inspection, an ECS ticket shall be made out and referred to the appropriate department for repair, then this question shall be marked "**Yes**". Do not refer these ECS tickets as "FYI". Examples of appropriate DOCS referral codes to the Underground are:

Region	Work Code	Queue
Brooklyn	UG0004	BEC1SECAVL
Queens		QECUGINBOX
Staten Island		S.EC.BT
Manhattan		M.EC1.BTUG M.EC2.BTUG M.EC3.BTUG
Westchester		NUGY
Bronx		NUGY

7.8.8. **Damaged Secondary Services / Mains / Crabs / Splices,** answers: No/ Repaired /Yes.

a. Secondary conditions such as swollen, damaged, peeling, cracked, jacket rolled back or exposed conductor.

b. Damaged U-splices or connections without the proper number of indents.

These shall be repaired upon discovery and this question shall be marked "**Repair**". If repairs are not possible at the time of inspection, an ECS ticket shall be made out and referred to the appropriate department for repair, and then this question shall be marked "**Yes**". Do not refer these ECS tickets as "FYI". Examples of appropriate DOCS referral codes to the Underground are:

Region	Work Code	Queue
Brooklyn	UG0006	BEC1SECAVL
Queens		QECUGINBOX
Staten Island		S.EC.BT
Manhattan		M.EC1.BTUG M.EC2.BTUG M.EC3.BTUG
Westchester		NUGY
Bronx		NUGY

7.9 **UG Section 5 Tier 2:**

7.9.1. **Did you find a Tier 2 rebuild item that required follow up to complete? If "Yes", complete the questions below.** Answers: Yes/No. If a Tier 2 rebuild item is required within the structure select **"Yes"** and complete the following questions:

a. Is a Structure Conductor Upgrade required?

b. Does a Main require replacement?

c. Does a Service require replacement?

7.9.2. **Is a Structure Conductor Upgrade required?** (Cut and Rack) – Answers: Yes or No, if a secondary cables not properly racked, blown limiters, the hole is very congested; there are no remaining pockets/tails for the required work within the structure or limited space for the employee to work safely. Also answer the following questions:

a. Any blown limiters?

b. Larger crabs needed?

c. Are there enough stanchions on the walls?

7.9.3. **Does a Main require replacement?** Answers: Yes or No, if a cable is recommended for replacement. Also answer the following questions:

a. Any missing neutral?

b. Insulator/Jacket damaged?

c. Is the cable damaged in the duct?

7.9.4. **Does a Service require replacement?** - Answer Yes or No, if a cable is recommended for replacement. Also answer the following questions:

a. Any missing neutral?

b. Insulator/Jacket damaged?

c. Is the cable damaged in the duct?

7.10 **Enter the B-Ticket number for the Tier 1-A (Barrier Installation) and Tier 1-B follow ups.** This section is for recording the B-Ticket created because any of these conditions were found in the structure:

a. Cable or crab in contact with frame or cover (BI=Barrier Installed) = Barrier Installed.

b. Structure/Equipment Damage, Cover Damage/Clogged, Needs Regrade

= Yes

d. Sump Pump inoperable/ungrounded (EO-12160-C)= Yes

e. Exposed conductor/visible burnouts= Yes

f. Damaged neutral cable/connections= Yes

g. Damaged Secondary Services / Mains / Crabs / Splices= Yes

8.0 PERMANENT RECORD OF STRUCTURE INSPECTIONS

8.1 EDIS shall be used as the permanent record of underground distribution structures inspections.

8.2 Each underground inspection form shall be reviewed and initialed by a supervisor or designee.

8.3 The data on the "UG Distribution Structure Inspection Form (EO-10359)" form shall be entered into the EDIS (Electric Distribution Inspection System) within three days of the inspection.

8.4 The quality of the inspections and inspection data is critical to the mitigation of stray voltage. It is vital that the quality of these inspections is impeccable and is entered into EDIS in a timely manner. These inspections are used to identify needed repairs and secondary rebuild items that can prevent incidents of stray voltage. In addition, several recent stray voltages have been the result of abandoned secondary and services cables that were never removed from the structures. It is critical that retired cable shall be cut, the ends properly insulated and whenever possible, removed.

9.0 REPAIR OF CONDITIONS FOUND ON INSPECTION OF UNDERGROUND DISTRIBUTION STRUCTURES

9.1 Crews performing an underground inspection are expected to make minor repairs and should be equipped with material necessary to make such minor repairs, such as fairleaders, porcelains, shrink caps, shrink sleeves, etc.

9.2 For all Manholes or Services Boxes with slotted cover, make sure to remove all inner dust pans. The presence of inner dust pans located in structures with vented manhole covers does not allow the structure to ventilate properly. See Bulletin B-56.

9.3 Any repair work identified during the inspection should be initiated at the time of inspection. If repairs are not completed before Company forces leave the site, an ECS ticket shall be created and routed to the appropriate department for

follow-up repairs. If multiple repairs are required, one ECS ticket should be issued indicating all required follow-up work. If repairs are completed before Company forces leave the site, an ECS ticket is not required unless stray voltage was found at the structure. All ECS tickets created as a result of an underground inspection should have a trouble code of "EDSSIP", except structures found with stray voltage. Structures found with stray voltage, should have ECS tickets issued with a trouble code of "EDSENE."

9.4 Barrier Installation:

9.4.1. The Manhole/Service Box Insulating Barrier is a method for creating an insulating barrier between cables, splices or attachments and the Manhole/Service Frame and its Cover. The Manhole/Service Box Insulating Barrier will eliminate electrical problems created by contact between exposed wires, the Manhole/Service Box frame and its cover, and will mitigate or prevent the electrical hazard to people and animals that make contact with the structures.

9.4.2. The insulating barrier is used when the secondary/service cables are in contact with the structure frame or cover and the cables cannot be repositioned to prevent contact.

9.4.3. The barrier is made of interlocking non-flammable polyester fabric tiles (C&S 410-0582) in combination with a green-rolled rubber blanket (C&S 410 - 0590). Each tile has 1 square foot. The tiles can be easily stored and transported by field crews and can be assembled in the field to match the varying sizes of the structures. However, if the tiles are not properly installed and secured, the cable may contact the frame and cover.

9.4.4. Attach and cut to size as many tiles as needed to cover the cable. On the back of the tiles, there is an interlock design. The tiles can attach to each other and form a board. (See Picture 1 & 2 in section 11, Exhibit C of this specification).

9.4.5. Place the insulating barrier tile board on top of the cable in the service box. If possible, use tie wraps to secure it on the stanchions inside the box (Con Ed reference drawing: EO-13282-B).

9.4.6. After the insulating barrier is installed, place a piece of company approved green-rolled rubber blanket (C&S 410-0590), on top of the board before closing the cover. This is done to increase the insulation boundary of the barrier. (See Picture 3 in section 11, Exhibit C of this specification).

9.4.7. These insulation barriers should only be used as a temporary solution to prevent a stray voltage problem. All structures in which the insulating barrier has been installed will require a B-Ticket creation for a Structure Conductor Upgrade and an enlargement review, also in UG Section 5 Tier 2 the question "Is a Structure Conductor Upgrade required? Shall be marked "Yes".

10.0 REFERENCE DOCUMENTS & SPECIFICATIONS

10.1 The following specifications and documents are referenced in this specification:

EO-10110	Inspection and Maintenance of Network Type Distribution Equipment
EO-6141	Maintenance of Oil Reservoirs on Distribution Feeders
EO-6217-C	Method of Sealing Phase Grouped Cables and Conduits for Services, Manholes and Vaults
EO-1184	Identifying Cable and Splice Abnormalities on Distribution Feeders
EO-1147	Secondary Cable Distribution Boxes
EO-1022	Design Limitations of Primary Feeder Subway Systems
EO-10222	Repair Procedure for Underground Distribution Structures
EO-5227	Inspection Procedure for Underground Distribution Structures

11.0 ATTACHMENTS

The following exhibits are attached.

Exhibit A - Inspection Form for UG Distribution Structures
Exhibit B - Guide for the UG Distribution Structures Form
Exhibit C - Barrier Installation Demonstration
Exhibit D - Joint Regulator (Oil Reservoir and Splice Joint)

Edward Naylor (Signature on File)
Edward Naylor
Section Manager
Secondary System Analysis
Distribution Engineering Department

George T. Jensen
Paul Rodriguez

REVISION 2 General Revision, Bulletins: 49, 51, 53, 70 & 73 are incorporated in this spec and are now obsolete. General Revision, added contents from EDIS for the new EO-10359 inspection form. EO-10111 and EO-10113 are incorporated in this spec and are now obsolete. Specification has been reviewed for environmental concerns.	FILE Operation and Maintenance of Equip. Manual No. 1, Sect. 13 Repairs & Miscellaneous Tests

EXHIBIT A

INSPECTION FORM FOR UG DIST. STRUCTURES

EDIS - Inspection Form EO-10359 (UG Distribution Structures Inspection Form)

Header Information

* *Indicates required fields*

1. Inspection Type: PSC-UG Distribution Structure Inspection

*** 8. Inspection Date:**

*** 9. Inspection Performed by:**

2. Form Name: EO-10359 (UG Distribution Structure Inspection Form)

Con Edison Employee

*** 3. Asset #:**

*** Employee #:**

*** 4. Asset Type:**

*** Company Code:**

*** 5. Region:**

*** Contractor (External Employee)**

*** 6. M & S Plate**

First Name:

*** 7. Location:**

Last Name:

Organization:

Comments:

Stray Voltage

1. If Stray Voltage is found, report it to Call Center or Control Center

*2. Did you find Stray Voltage before and/or after doing the job? — No Stray Voltage Found / Asset Not Found / No Access / Not Required / Stray Voltage Repaired

2.1. Enter the B-Ticket number

*3. What is the current weather? — Cold / Fair / Freeze / Foggy / Hot / Rain / Snow / Thaw / Windy

UG Section 1

1. Structure Access Restrictions: Record tag or flush number below

*2. Is there a Structure Access Restriction? — Yes / No

2.1. Enter the D-Fault number placed or found (EO-1184)

2.2. Enter the Environmental Tag present or identified during inspection (GEI 2.00, GEI 3.00)

2.3. Enter the Flush number (GEI4.00)

UG Section 2

*1. UG Structure reason for visit? — Scheduled or targeted inspection / Critical Manhole Inspection (Manhole only) / Ad-Hoc Inspection (Incorporated into Routine Work) / Repairs or follow-up previous inspections

*2. What is the Cover Type? — Vented / Grating / Solid Metallic / Solid Non-Metallic / Vented New

*3. Where is the Asset (Structure) located? — Street / Sidewalk / Backyard / Curb / Private Property

*4. Is a Joint Regulator present? — Yes / No / Serviced

5. Qualified personnel fill out forms in EO-6141 (Inspection/Maintenance of Volume Joint Regulators)

Page 2, INSPECTION FORM FOR UG DIST. STRUCTURES

UG Section 3 Tier 1-A	
1. (Tier 1-A Defects) You must repair these items before leaving location, if a Barrier is installed create a B-Ticket. Use ECS code "SIP"	
*2. Did you make a Tier 1A repair?	Yes / No
2.1. Cable or crab in contact with frame or cover (BI = Barrier Installed).	No / Barrier Installed
2.2. Improperly sealed secondary end caps.	No / Repaired
2.3. Unsealed ducts (EO-1100) (EO-6217-C)	No / Repaired
UG Section 4 Tier 1-B	
1. (Tier 1-B Defects) Repair on location or initiate detailed B Ticket for follow up; use ECS code "SIP"	
2. Damaged primary feeder cable and joints, C-Faults and D-Faults (EO-1184) must be reported to Control Center.	
*3. Did you make a Tier 1B repair or does it require follow up for repair?	Yes / No
3.1. Structure/Equipment Damage,Cover Damage/Clogged, Needs Regrade.	No / Repaired / Yes
3.2. Sump Pump inoperable/ ungrounded (EO-12160-C)	No / Repaired / Yes
3.3. Expose conductors/ visible burnouts	No / Repaired / Yes
3.4. Damaged neutral cable / connections	No / Repaired / Yes
3.5. Damaged Secondary Services/ Mains/ Crabs/ Splices	No / Repaired / Yes
UG Section 5 Tier 2	
*1. Did you find a Tier 2 rebuild item that required follow up to complete? If Yes, complete the questions below.	Yes / No
2. Is a Structure Conductor Upgrade Required? (Cut and Rack)	Yes / No
2.1. Any blown limiters?	Yes / No
2.2. Larger crabs needed?	Yes / No
2.3. Are there enough stanchions on the walls?	Yes / No
3. Does a Main require replacement?	Yes / No
3.1. Any missing neutral?	Yes / No
3.2. Insulator/Jacket Damaged?	Yes / No
3.3. Is the cable damaged in the duct?	Yes / No
4. Does a Service require replacement?	Yes / No
4.1. Any missing neutral?	Yes / No
4.2. Insulator /Jacket Damaged?	Yes / No
4.3. Is the cable damaged in the duct?	Yes / No
B-Ticket	
1. Enter the B-Ticket number for the Tier 1-A (Barrier Installation) and Tier 1-B follow ups.	

EXHIBIT B

GUIDE FOR THE UG DISTRIBUTION STRUCTURE FORM

EDIS EO-10359 (UG Distribution Structures Inspection Form) Reference.

- The Header Section information is extracted automatically by the system for a Scheduled, Ad Hoc and Previous inspection. In the case that the user wants to print out a "Blank Inspection Form" the Header information will not be shown and must be typed it in.
- Write any comments in the space provided in the Header Section.
- The Questions that have the Red Asterisk (*) Indicates required fields and shall be marked, if you don't mark them you can save the form, but your supervisor cannot post the inspection later on.

Stray Voltage (Any conductiving material that is not intended to be energized)

1. If Stray Voltage is found, report it to Call Center or Control Center (This is a statement).
*2. Did you find Stray Voltage before and/or after doing the job? (No Stray Voltage Found / Not Required / Asset Not Found / No Access / Stray Voltage Repaired).
   2.1 Enter the B-Ticket number (Only If Stray Voltage is Found / Repaired).
*3. What is the current weather? (Cold / Fair / Freeze / Foggy / Hot / Rain / Snow / Thaw / Windy).

UG Section 1: Structure Access Restrictions

1. Structure Access Restrictions: Record tag or flush number below and stop, otherwise continue. This is a statement.
*2. Is there a Structure Access Restriction? If you answer "Yes", complete the questions below.
   2.1 If a D-Fault is placed or found
   2.2 Environmental Tag is placed or found
   2.3 Or the structure needs a Flush;
   If you find a Structure Access Restriction, this question shall be marked "Yes" and saved. Automatically the inspection is STOP, then NOTIFY THE CONTROL CENTER and/or YOUR SUPERVISOR. After completing the D fault, Environmental or Flush, The crew/clerical staff/supervisor, shall update the inspection by filling out the number of the Tag identified, reported or placed. Now the inspection shall be saved and submitted.
   Refer to EO-1184 for further guidance on D-Faults, for Environmental conditions to GEI 2.00, GEI 3.00 and for Flush to GEI 4.00.

UG Section 2:

*1. UG reason for visit?
   a) Schedule or Targeted, means you were sent there for a schedule inspection.
   b) Critical Manhole Inspection, must be a Manhole (cannot be SB or V).
   c) Ad-Hoc Inspection (incorporated into routine work), inspection not scheduled or targeted.
   d) Repairs or Follow up, make repairs from an earlier inspection.
*2. What is the Cover Type? (Vented / Grating / Solid Metallic / Solid Non- Metallic / Vented New).
*3. Where is the Asset (Structure) located? (Street / Sidewalk / Backyard / Curb / Private Property).
*4. Is a Joint Regulator present? (Yes/ No/ Serviced).
   The Joint Regulators are used to maintain the dielectric oil level in lead covered (PILC) cable and joints.
5. Qualified personnel fill out forms in EO-6141 (Inspection/Maintenance of Volume Joint Regulators). This is a statement.

UG Section 3: Tier 1-A

1. (Tier 1-A Defects) You must repair these items before leaving location; if a Barrier is installed create a B-Ticket. Use ECS code "SIP". This is a statement.
*2. Did you make a Tier 1A repair? (examples below).
   2.1 Cable or crab in contact with frame or cover (BI = Barrier Installed); A secondary or service conductor found in contact or within 6" of the structure cover or frame. Install a barrier if necessary. See Exhibit C in EO-10359 for installation demonstration.
   All structures in which the insulating barrier has been installed will require a B-Ticket creation for a Structure Conductor Upgrade and an enlargement review, use ECS code "SIP". Also in UG Section 5 Tier 2 the question: Is a Structure Conductor Upgrade required? (Cut and Rack), shall be marked "Yes".
   2.2 Improperly sealed secondary end caps. A secondary or service conductor that is not sealed in accordance with specification EO-2509-C or service crab-joints with the vinyl cable caps (i.e.Yellow, Black) covering the open ends are considered an improperly sealed cable end and must be repaired.
   2.3 Unsealed ducts (EO-1100) (EO-6217-C), a duct not found in accordance to these specs.

Page 2, GUIDE FOR THE UG DISTRIBUTION STRUCTURE FORM

UG Section 4: Tier 1-B

1. (Tier 1-B Defects) Repair on location or initiate detailed B Ticket for follow up; use ECS code "SIP". This is a statement.
2. Damaged primary feeder cable and joints, C-Faults and D-Faults (EO-1184) must be reported to Control Center. This is a statement.

*3. Did you make a Tier 1B repair or does it require follow up for repair? (examples below).
NOTE: The B-Ticket creation is needed only if you do not repair the defect and you answered "Yes" to any of the questions. A detail B-ticket shall be created to forward or follow up the work to other crew for further repair.

3.1 Structure/Equipment Damage, Cover Damage/Clogged, Needs Regrade. A structure with large cracks in walls or ceiling, enlargement required, any evidence of oil leaking, defective steel support beams or bars, any corroded attachment like gauges, tank and fins. A cover/grating found cracked, holes clogged, unbolted, above or below grade. A structure shifted or improperly placed, broken baffles, damaged elbows, doors, hinges, latch and locks that do not close. In URD damaged primary elbows, corroded box, HV and LV Bushings, missing test points/caps, Micarta supports, tags and fault indicators, etc.

3.2 Sump Pump inoperable/ungrounded (EO-12160-C). Sump pump damaged, for example do not operate when the float is lifted or that is found not grounded.

3.3 Expose conductors/ visible burnouts. A condition where secondary or service cables are burning or conductor is exposed.

3.4 Damaged neutral cable/connections. The neutral don't have the proper number of indents or the aluminum cables that are not connected in accordance with EO-5403, Bonds that are broken on lead mains or services, damaged neutral bus or connections are broken apart.

3.5 Damaged Secondary Services / Mains / Crabs / Splices. Swollen, damaged, peeling, cracked or burnt crabs/cable; jacket rolled back, damaged U splices or connections without the proper number of indents.

UG Section 5: Tier 2

*1. Did you find a Tier 2 rebuild item that required follow up to complete? If Yes, complete the questions below. This is a statement.

2. Is a Structure Conductor Upgrade Required? (Cut and Rack) - A condition that the inspector recommends for rebuild like, the secondary cables not properly racked, the hole is congested; there are no remaining pockets/tails for the required work within the structure or limited space for the employee to work safely. Also if you select Barrier Instaled ="Yes" in Section Tier 1-B, you shall select this questions as "Yes".
   2.1 Any blown limiters?
   2.2 Larger crabs needed?
   2.3 Are there enough stanchions on the walls?
3. Does a Main require replacement? - A main that is recommended for replacement due to cracked lead armor, corroded lead armor, or insulation is cracked, brittle or baked.
   3.1 Any missing neutral?
   3.2 Insulator/Jacket Damaged?
   3.3 Is the cable damaged in the duct?
4. Does a Service require replacement? - A service that is recommended for replacement due to cracked lead armor, corroded lead armor, or insulation is cracked, brittle or baked.
   4.1 Any missing neutral?
   4.2 Insulator/Jacket Damaged?
   4.3 Is the cable damaged in the duct?

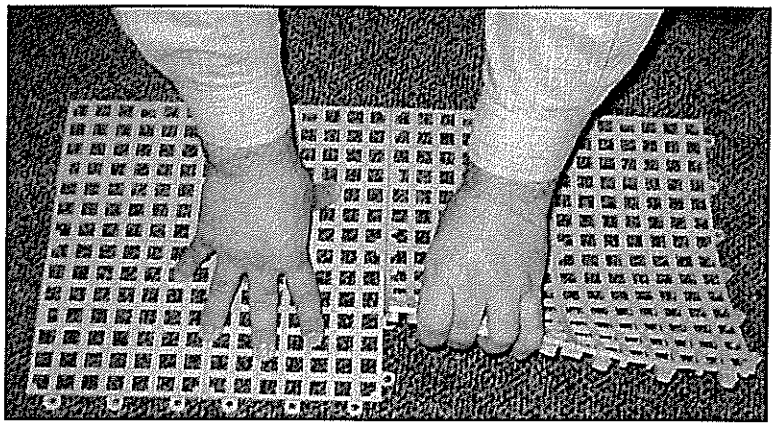
B-Ticket

1. Enter the B-Ticket number for the Tier 1-A and Tier 1-B follow ups.
   Only if you find Tier 1-A (Barrier Installation) and Tier 1-B follow ups. The clerks shall enter the detailed B-Ticket information related to the Inspection.

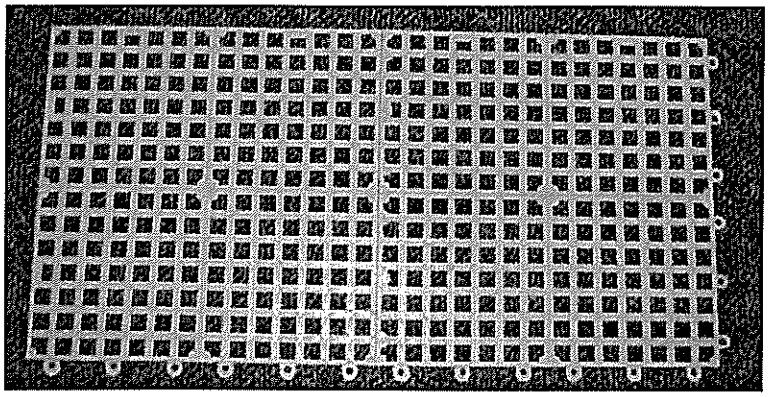
EXHIBIT C

BARRIER INSTALLATION DEMONSTRATION

Picture 1



Picture 2



Picture 3

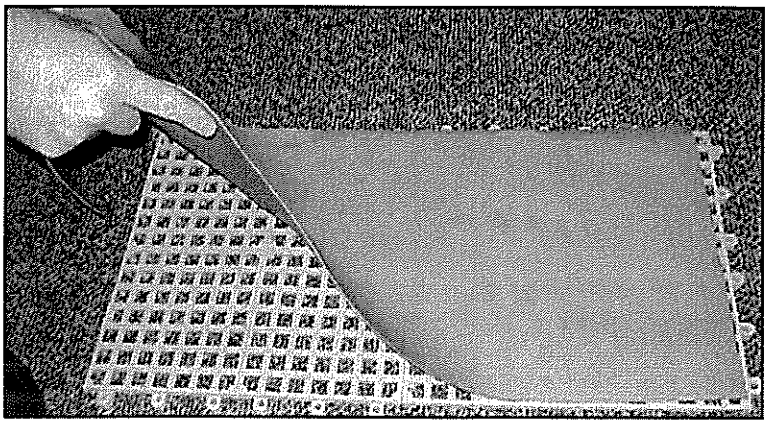
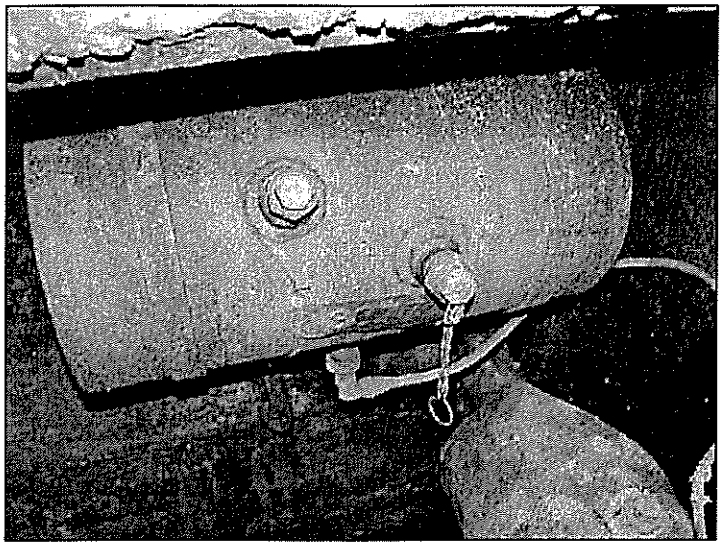


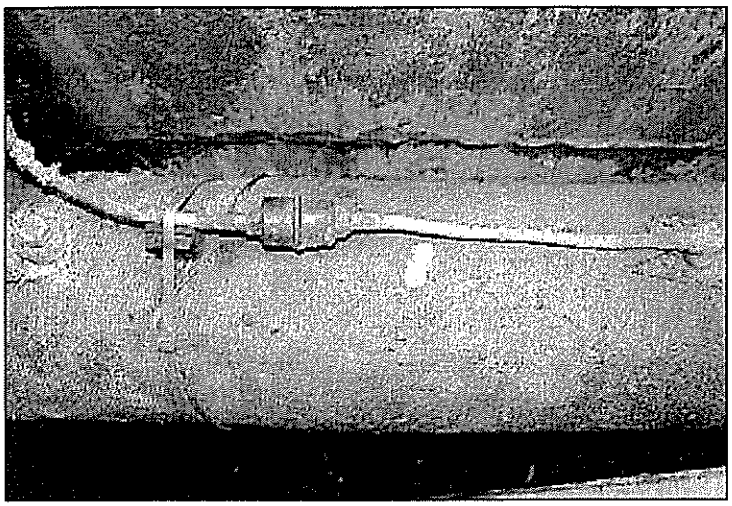
EXHIBIT D

JOINT REGULATOR (OIL RESERVOIR AND SPLICE JOINT)

Picture 1:
Gas Pressure Oil Reservoir



Picture 2:
Splice Joint



Area	Structure ID		Date
M	V4	7023	01/02/04
B	V4	7805	01/02/04
B	V4	8241	01/02/04
V	PO	9549	01/02/04
Q	Manhole	11941-1	01/02/04
Q	Manhole	43130-1	01/02/04
X	V	0475	01/03/04
X	TM	0476	01/03/04
X	VO	1097	01/03/04
X	VS	1836	01/03/04
X	VS	2135	01/03/04
Q	Manhole	27511-1	01/03/04
M	V4	6834	01/04/04
M	V4	9833	01/04/04
Q	Manhole	03044-1	01/04/04
Q	Manhole	10954-1	01/04/04
M	VI	0542	01/05/04
X	VO	2040	01/05/04
M	VO	2444	01/05/04
M	VO	2693	01/05/04
M	VO	2902	01/05/04
M	VO	5714	01/05/04
B	V4	5765	01/05/04
M	VO	6104	01/05/04
M	V4	6713	01/05/04
Q	V4	8397	01/05/04
W	PO	9672	01/05/04
Q	Manhole	11960-1	01/05/04
X	V	0685	01/06/04
	VO	2255	01/06/04
M	VO	3022	01/06/04
M	VO	3068	01/06/04
Q	V4	3187	01/06/04
M	VO	3965	01/06/04
M	VO	4195	01/06/04
M	VO	4278	01/06/04
M	VO	4607	01/06/04
M	VO	4653	01/06/04
W	V4	5289	01/06/04
W	V4	6275	01/06/04
M	VO	8464	01/06/04
M	V4	8516	01/06/04
W	VO	9027	01/06/04
W	VO	9091	01/06/04
Q	V4	9625	01/06/04
B	Manhole	32836	01/06/04
Q	Manhole	16995-1	01/06/04
Q	Manhole	59008-1	01/06/04
M	VO	0432	01/07/04
M	VO	0582	01/07/04
M	VO	0722	01/07/04
W		1877	01/07/04
W		1970	01/07/04
M	VO	1991	01/07/04
M	VO	4873	01/07/04
	VO	5009	01/07/04
	V4	5340	01/07/04
M	VO	5573	01/07/04
M	VO	5838	01/07/04
M	VO	6140	01/07/04

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC7
Date of Response: 07/20/2007
Responding Witness: forecasting Panel

Question No. :188
Following up on the Company's response to City Interrogatory 62, since historic level of DSM are not removed from the forecast, is it correct that, by default, growing amounts of DSM on your system are impacting the coefficients of the independent variable and/or the Arithma portion of the sales and sendout models?

Response:

Given the relatively small amounts of DSM in the recent historical data, we believe that their impact on the coefficients of the forecasting models, if any, will be negligible.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to NYC Interrogatories – Set NYC7
Date of Response: 07/20/2007
Responding Witness: forecasting Panel

Question No. :189
Has the Company tested methods of eliminating the impacts of growing levels of DSM on the coefficients and/or the Arithma portion of your sales and sendout models? What were the results of any such tests?

Response:

No such tests were conducted.