# BEFORE THE FLORIDA
# PUBLIC SERVICE COMMISSION

## DOCKET NOS. 050045-EI AND 050188-EI
## FLORIDA POWER & LIGHT COMPANY

## JULY 28, 2005

## IN RE: PETITION FOR RATE INCREASE BY FLORIDA POWER & LIGHT COMPANY
## AND
## IN RE: 2005 COMPREHENSIVE DEPRECIATION STUDY BY FLORIDA POWER & LIGHT COMPANY

## REBUTTAL TESTIMONY & EXHIBIT OF:

## STEVEN P. HARRIS

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**FLORIDA POWER & LIGHT COMPANY**

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**JULY 28, 2005**

**Q. Please state your name and business address.**

A. My name is Steven P. Harris. My business address is ABSG Consulting, Inc. (ABS Consulting), 1111 Broadway Street, Oakland, California 94607.

**Q. Did you previously submit direct testimony in this proceeding?**

A. Yes.

**Q. What is the purpose of your rebuttal testimony?**

A. I will respond to portions of the testimony submitted on behalf of the Florida Office of Public Counsel (OPC) by Patricia W. Merchant, the Commercial Group by James Selecky, AARP by Stephen Stewart, the Florida Retail Federation (FRF) by Sheree Brown and South Florida Hospital and Health Care Association (SFHHA) by Lane Kollen, addressing the estimated annual storm loss on Florida Power & Light Company's (FPL's) system and the witnesses' respective calculations of a proposed annual Storm Damage Accrual amount.

**Q. Are you sponsoring an exhibit to your rebuttal testimony?**

A. Yes. I am sponsoring an exhibit consisting of two documents, SPH-3, Storm Reserve Fund Analysis Case Results, and SPH-4, Comparison of Protection

Afforded by $120 million, $70 million and $40 million Annual Accrual, which is attached to my rebuttal testimony.

## THE ABS CONSULTING LOSS ANALYSIS IS RELIABLE

**Q. Do you agree with witnesses Merchant, Stewart, Brown and Selecky who suggest that a more reliable estimate of annual storm damage would be based on actual 1990 to 2004 data, or some shorter period, excluding the years 1992 and 2004 as extraordinary?**

A. No. Calculating an actual or simulated expected annual storm damage amount that selectively excludes any possible damage events, whether large and infrequent or small and frequent, is neither meaningful nor appropriate. Any reliable estimate of the expected annual windstorm damage to which FPL is exposed (expected annual damage) must include the most complete and full damage distribution that can be determined both from actual experience and from simulated possible damage.

It is true that not all years will experience damage equal to or greater than any estimate of the expected annual damage. Many years may experience no damage and others greater damage. Therefore, in developing expected annual damage estimates, the most reliable methodology is to utilize the longest, most complete historical record available. Since Florida's recorded hurricane history is just over 100 years old, insurers rely on simulation modeling to extend this "known" history into thousands of simulated years for the purpose

of estimating likely damage. The simulated expected annual damage to FPL's system is the best estimate of the annual damage considering all possible future hurricanes; not just the "normal" damage as proposed by Ms. Merchant, Ms. Brown, Mr. Stewart and Mr. Selecky.

**Q. Do experts agree with you that selectively excluding large events from the calculation of an expected annual damage estimate produces biased results?**

A. Yes. The Florida Commission on Hurricane Loss Projection Methodology (FCHLPM), an independent panel of experts that evaluates computer models and actuarial methodologies for projecting hurricane losses, goes to great lengths to ensure that all models used in the State for insurance rating purposes appropriately capture the full range of the hurricane hazard. As mentioned in my direct testimony, the ABS Consulting USWIND™ model used to calculate FPL's expected annual damage is one of only four models evaluated and determined acceptable by the FCHLPM for projecting hurricane loss costs.

**Q. Witnesses Merchant, Stewart, Brown and Selecky argue that FPL's annual storm damage accrual does not need to be increased substantially, if at all, because the accrual has been sufficient to cover actual storm damages incurred until the Storm Reserve balance became negative in 2004. Do you agree?**

A. No. First, remember that prior to 1993, FPL had insurance to cover storm damage to FPL's transmission and distribution assets. After Hurricane

Andrew, insurers essentially withdrew from the market and adequate amounts of transmission and distribution insurance at reasonable prices became unavailable. The situation worsened after the events of September 11, 2001. Since Hurricane Andrew, FPL has relied heavily on its Storm Reserve to self-insure for storm damage to its transmission and distribution and other assets, using annual contributions to the Reserve and earnings on the Reserve to accumulate a fund to pay for storm damage when it occurs. Mr. Dewhurst addresses the regulatory framework associated with FPL's Storm Reserve in detail.

The reason that FPL's annual accrual appears to have been sufficient between 1993 and 2003 (excluding the real and large losses of Hurricane Andrew and the hurricanes of 2004) was FPL's favorable storm history: several small storms with few moderate annual losses. There were no hurricanes with strong SSI 2 to SSI 4 winds that made direct landfalls in FPL's service territory during this period.

The intervenors' suggestions would only be acceptable if FPL's management and the Commission are willing to speculate that FPL's recent good luck over a brief, selective storm period considered by Ms. Merchant and other witnesses will continue. However, over the 100-year history, there have been many more hurricane landfalls and damaging events than in the last 13 years. Also, there is a growing body of evidence suggesting that the North Atlantic

Oscillation (NAO) and the El Niño or Southern Oscillation (ENSO) are important climate variables in modulating hurricane return periods. The damage estimated in the current ABS Consulting study, assumes the average hurricane activity over the century. If you accept the opinion that changes in the ENSO and NAO variables indicate we have entered a more active period for hurricane formation like the 1920s and 1940s, FPL may expect to experience higher than average damage to T&D over the next several years and the ABS Consulting damage estimates could understate the actual risk going forward.

**Q. Please respond to Ms. Merchant's suggestion on page 9 of her direct testimony that the USWIND™ model cannot be relied upon because the model "does not distinguish between the annual damages that are less costly and those that are extraordinary."**

A. Ms. Merchant is incorrect. Table 5-2 of the Storm Loss Analysis titled "Aggregate Damage Exceedance Probabilities and Expected Annual Damage by Layer," Document SPH-1, page 21 of 29, filed with my direct testimony, provides a detailed quantification of both the likelihood and severity of a full range of possible FPL storm losses. Table 5-2 shows the likelihood of damage to FPL's system exceeding a specified value over a one-year, three-year and five-year period. For example, the probability of storm damage exceeding $950 million in a single year, like the 2004 hurricane season, is 1.2%, or about a 1 in 100 year event. The likelihood of storm damage exceeding $200 million in a single year is 10.2%, or about a 1 in 10 year

event. As discussed in Section 5.3 of the Storm Loss Analysis, the results of this annual damage probability analysis are inputs to the Storm Reserve Solvency Analysis.

## THE ANNUAL ACCRUAL LEVELS SUGGESTED BY THE INTERVENORS PRESENT A MUCH GREATER LIKELIHOOD OF INSOLVENCY OVER THE FIVE-YEAR PERIOD

**Q. Have the intervenors considered the performance of the Storm Reserve at their respective recommended annual accrual levels?**

A. No. With the exception of Mr. Kollen, none of the intervenors considered the impact of their recommendations on the solvency of the Storm Reserve. Mr. Kollen believes that the balance of the Storm Reserve should be zero regardless of the increased rate volatility associated with repeatedly seeking special assessments.

**Q. Is it essential that the intervenors consider the solvency of the Storm Reserve when recommending a level for the annual accrual?**

A. Yes. A solvency analysis provides a tool for management and policymakers to determine the performance of the Storm Reserve and to test whether annual accrual amounts meet their objectives. With rate stability as a policy objective, the question is what Storm Reserve balance should FPL seek to achieve and how quickly should it be reached to provide the desired stability in rates? That is a question addressed by Mr. Dewhurst in his testimony and should be a consideration in the Commission's decision. Once a proper Storm

Reserve balance is determined and achieved, an accrual that equals the expected annual damage will maintain this level in the Storm Reserve.

The ABS Consulting Solvency Analysis is a cash balance analysis starting with some initial balance, which is zero in this case. An annual accrual is added to the cash balance, and interest on the account balance at the end of the year is calculated and added to the account. Annual storm damage is simulated consistent with the Storm Loss Analysis for each of the five years. The storms are randomly simulated, but over a long period of time, they have an average of $73.7 million in damage to FPL's system for each of the five years in the solvency simulations.

For example, given that the expected annual damage is $73.7 million per year, if the Storm Reserve is funded at $73.7 million per year, which is the annual accrual suggested by Mr. Kollen and approximately the annual accrual suggested by Mr. Selecky, over a long period of time, the expected annual damage equals the annual accrual and the Reserve will not gain or loose value. Therefore, with a starting balance of zero, the expected balance of the Reserve will always hover around zero. At a balance of $0, any storm damage will have the effect of causing insolvency whenever it occurs. Likewise, if the beginning Storm Reserve balance is $250 million or $350 million, the balance will not grow if the annual accrual equals the expected annual damage. Rather, it will fluctuate around the beginning balance.

**Q. Please respond to Ms. Merchant's assertion on page 21 that ABS Consulting's "solvency analysis does not contemplate that the annual accrual might be lowered by the Commission or that the utility might use another vehicle to replenish the storm reserve in a shorter timeframe."**

A. The ABS Consulting Solvency Analysis has considered the current annual accrual of $20.3 million and demonstrated that it is inadequate to fund storm losses going forward with an initial Storm Reserve balance of zero. Ms. Merchant proposes the selective reduction of the limited FPL loss experience as the basis for her recommendation of an annual Storm Reserve accrual without addressing her own concern of the level to which the Storm Reserve balance should be replenished. Referring to the Solvency Analysis, Ms. Merchant states on page 21 that "[u]nless you agree 100% with the assumptions included in his analysis, I do not believe that his solvency analysis should be relied upon." The future performance of the Storm Reserve cannot be established without a financial simulation analysis that includes both the annual accrual and the beginning balance of the Storm Reserve. Ms. Merchant does not consider the starting Storm Reserve balance in making her recommendations, nor does she propose a target Storm Reserve balance.

**Q. Please respond to Mr. Stewart's analysis on page 14 of his testimony, which demonstrated that the balance of the Storm Reserve would have been $745.5 million after the 2004 hurricane season if the annual accrual had been $120 million beginning in 1990.**

A. In 1990, FPL did not need a $120 million annual Storm Reserve accrual because the Storm Reserve balance was $60 million and growing due to a favorable storm experience during the 1980s and because FPL's asset base was much smaller since FPL had fewer customers then. In addition, FPL had insurance through 1993, when it became unavailable. Viewed retrospectively, over the period from 1992 through 2004, FPL did need a higher annual accrual closer to the expected annual damage of $73.7 million. This is borne out by the first order estimate of the expected annual damage of $106 million performed by Ms. Merchant using a limited 12 years of loss history.

Currently, with a zero Storm Reserve balance, FPL has requested a $120 million annual accrual (approximately $70 million plus $50 million) to build the Storm Reserve balance up to a working target of $500 million that can fund for most but not all storms.

**Q. Does ABS Consulting's Solvency Analysis show there is value in setting the annual accrual at a level higher than the expected annual damage?**

A. Yes. Assuming an annual accrual of $70 million and a two-year recovery of negative balances, close to the expected annual damage, 50% of the time FPL's Storm Reserve will go insolvent within 5 years. If the annual accrual is $120 million and there is recovery of negative balances over a two-year period, the likelihood of insolvency goes down to 34%. Therefore, the value of accruing at a level higher than the expected annual damage until FPL's Storm Reserve reaches some substantial balance is a more rapid growth of the

Reserve balance and reduction in volatility, from insolvency one out of two years to insolvency one out of three years on average. This reduction in volatility would be seen in a reduced frequency of special assessment and a reduction of the levels of borrowing costs when the Storm Reserve does become insolvent from extraordinary storm years.

If the FPL Storm Reserve balance had been zero (as Mr. Kollen recommends) at the beginning of the 2004 storm season, the current deficit from storm restoration would be the full $890 million in uninsured damage. Providing a positive target balance for the Storm Reserve reduces the rate volatility and the recommended $120 million annual accrual would result, on average, in FPL requiring a special assessment for cost recovery every three years rather than every other year.

**Q. Have you analyzed the likelihood of Storm Reserve insolvency at the various annual accrual levels recommended by the intervenor witnesses?**

A. Yes. Document SPH-4, titled Storm Reserve Fund Analysis Case Results, demonstrates that the $20.3 million annual accrual recommended by Ms. Brown results in a 79% chance of insolvency in any one year of the five-year period both with and without recovery of negative balances over a two-year period. The expected fund balance at the end of five years with Ms. Brown's recommended accrual is negative $277 million with no recovery of negative balances in the Storm Reserve, and negative $71 million with recovery of negative balances over a two-year period.

The $35 million annual accrual recommended by Ms. Merchant results in a 68% chance of insolvency in any one year of the five years and an expected Reserve balance of negative $209 million without recovery of negative balances and negative $15 million with recovery.

At the $40 million accrual recommended by Mr. Stewart, there is a 64% chance of insolvency in any one year of the five-year period and an expected balance at the end of five years of negative $177 million with no recovery of negative balances and $11 million with recovery.

At an annual accrual of $70 million, recommended by Mr. Selecky and close to Mr. Kollen's $73.7 million recommendation, there is a 50% chance of insolvency in any one year of the five year period (or one out of two years). The expected balance at the end of five years is negative $14 million with no recovery of negative balances and $138 million with recovery of negative balances. The probability of insolvency at the end of five years is 34% and 17% for the 2 year recovery and no recovery cases respectively.

As stated in my direct testimony, the ABS Consulting analysis demonstrates that, at FPL's recommended annual accrual of $120 million, there is a 34% chance of insolvency in any one year of five years (or approximately one out of three years). At the end of five years, the expected balance in the Reserve is $256 million with no recovery of negative balances and $367 million with

recovery of negative balances. The probability of insolvency at the end of five years is 19% and 8% for the 2 year recovery and no recovery cases respectively: about half the risk of insolvency for the $70 million accrual.

**Q. Please respond to Ms. Merchant's concern that "the storm reserve could grow to become quite large in a short time" if FPL's requested annual accrual is accepted.**

A. Her concern is unfounded. As the Solvency Analysis demonstrates, if FPL's annual accrual is accepted, the likelihood of FPL's Storm Reserve growing above $500 million within five-years is only about one in three. On the other hand, at Ms. Merchant's recommended annual accrual of $35 million, on average, special assessments should be expected in more than three out of every five years and customers would, in most years, see two special assessments on their bills. With these negative expected balances, the Storm Reserve would not be expected to fund anything but very small losses going forward and the funding mechanism would be come a de-facto "pay-as-you-go" policy using special assessments. Mr. Dewhurst addresses the problems of such an approach in his testimony.

**Q. Do the annual accrual levels recommended by witnesses Merchant, Brown, Selecky, Stewart and Kollen cover "normal" levels of storm damage or "smaller" storms?**

A. Not necessarily. The annual accrual levels proposed by these witnesses are too small to cover transmission and distribution (T&D) damage from even

average Category 1 (SSI-1) storms that would make landfall in most of FPL's service territory.

Document SPH-4, page 2 of 4, shows the frequency-weighted average T&D damage from single SSI-1 storms, the least intense on the Saffir-Simpson Hurricane Scale, that could make landfall within 10 nautical miles of the specified mile post along FPL service territory. Document SPH-4 is similar to Figure 6-2 in Document SPH-1, which is attached to my direct testimony. Single SSI-1 landfalls near Miami, milepost 1480, have a mean (average) T&D damage of approximately $73 million. Single SSI-1 landfalls near Sarasota, milepost 1240, have an average T&D damage of approximately $20 million.

For a $40 million annual accrual the expected Reserve balance of $11 million after five years determined from the Solvency Analysis is not adequate to cover even the $20 million SSI-1 T&D damage. For a $40 million annual accrual, the Storm Reserve becomes insolvent for average SSI-1 landfalls anywhere in FPL's service territory since the damages are all greater than $11 million. Document SPH-4, page 2 of 4, also shows that the $70 million and $120 million annual accruals, which result in expected Reserve balances of $138 and $367 million at the end of 5 years, would provide adequate funds for all SSI-1 T&D storm damage.

Document SPH-4, page 3 of 4, shows that the expected Storm Reserve balance at the end of five years for a $40 million accrual does not cover any of the SSI-3 storm landfalls at all. It would cover about 20% of the T&D damage for SSI-3 storms. A $70 million accrual and expected Reserve balance of $138 million at the end of five years will be adequate for some but not all SSI-3s. It will cover most of a strike to Sarasota, milepost 1240, which averages damage of $160 million. It will cover most landfalls from West Palm Beach north. It would not, however cover even half of the damage from mile posts 1450 to 1540; Dade and Broward counties, where damage averages in excess of $300 million. The $120 million accrual would cover most SSI-3 landfalls except the greatest damage in Miami at landfall mile posts 1470-1490.

Similarly, as seen on Document SPH-4, page 4 of 4, the expected Storm Reserve balance at the end of five years for a $40 million accrual doesn't cover any of the SSI-4 storm landfalls at all. A $70 million accrual and expected Reserve balance of $138 million at the end of five years would be adequate for only a few SSI-4 storms. For SSI-4 storms, the $367 million balance expected Storm Reserve balance covers only a portion of T&D damage in Miami-Dade, Broward and Palm Beach Counties, which have the highest asset concentrations in FPL's service area.

Based on Figure 6-6 on page 6-6 of the Loss Analysis (SPH-1), which is attached to my direct testimony, you see that even at a $120 million annual

accrual, the expected $367 million balance at the end of five years would cover only a portion of the damage for most SSI-5 storm landfalls. For SSI-5 storms, the $367 million expected balance at the end of five years is only adequate to cover the least concentrated areas, which are in the northeast and southwest parts of FPL's service territory.

**Q. Does this conclude your rebuttal testimony?**

A. Yes.

Table 1-1a:
Storm Reserve Fund Analysis Case Results – No Recovery of Negative Balances

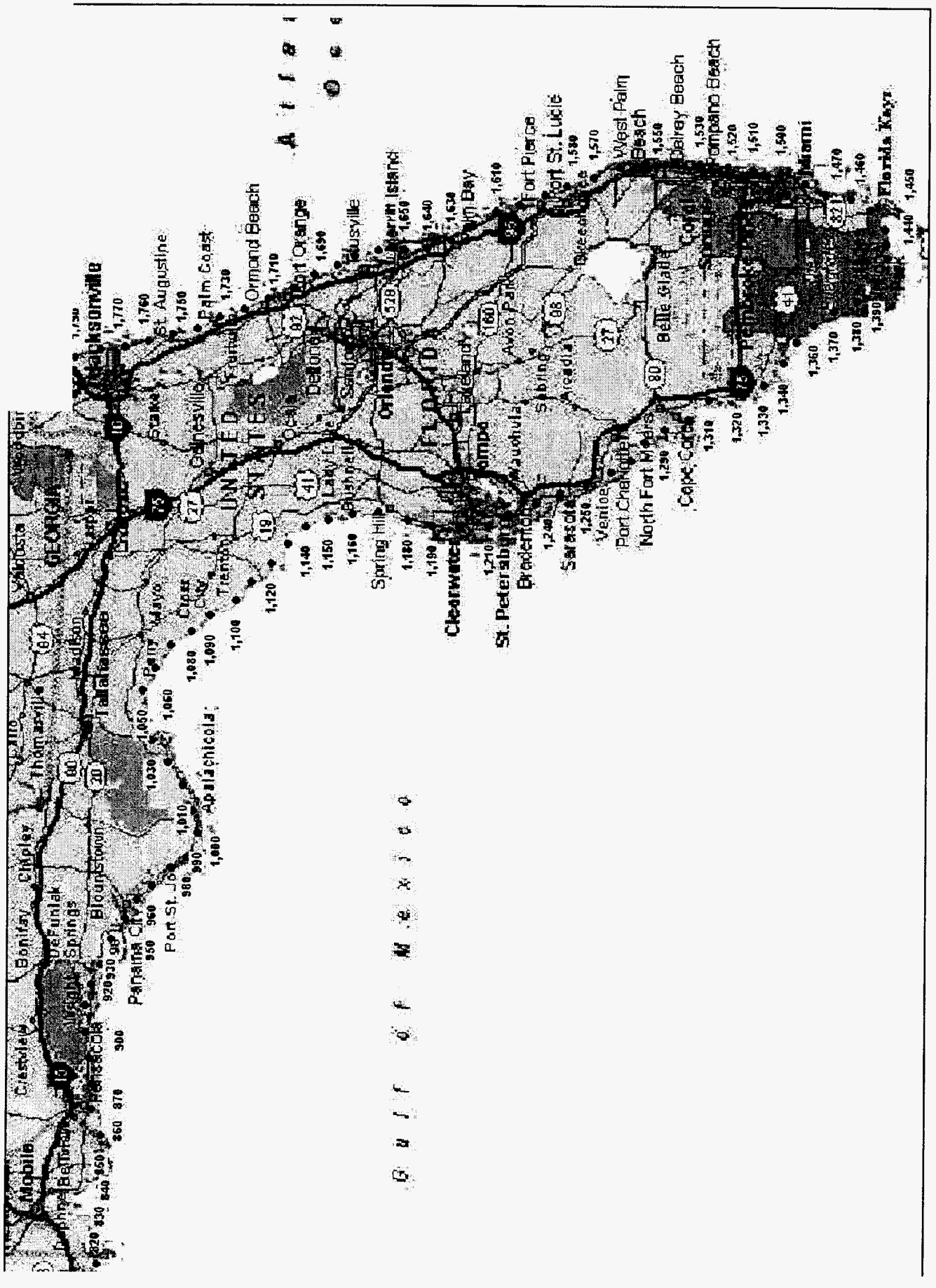
| Annual Accrual | Loss recovery | Mean (Expected) Fund Balance at 5 years ($ millions) | Probability of Insolvency within 5 years | Probability of Insolvency at the end of year 5 | Probability of Fund Balance in excess of $500 million in 5 years |
|---|---|---|---|---|---|
| $ 20.3 million | No recovery | ($ 277) | 79% | 70% | 0% |
| $ 35 million | No recovery | ($ 209) | 68% | 57% | 0% |
| $40 million | No recovery | ($ 177) | 64% | 52% | 0% |
| $70 million | No recovery | ($14) | 49% | 34% | 0% |
| $120 million | No recovery | $256 | 33% | 19% | 38% |

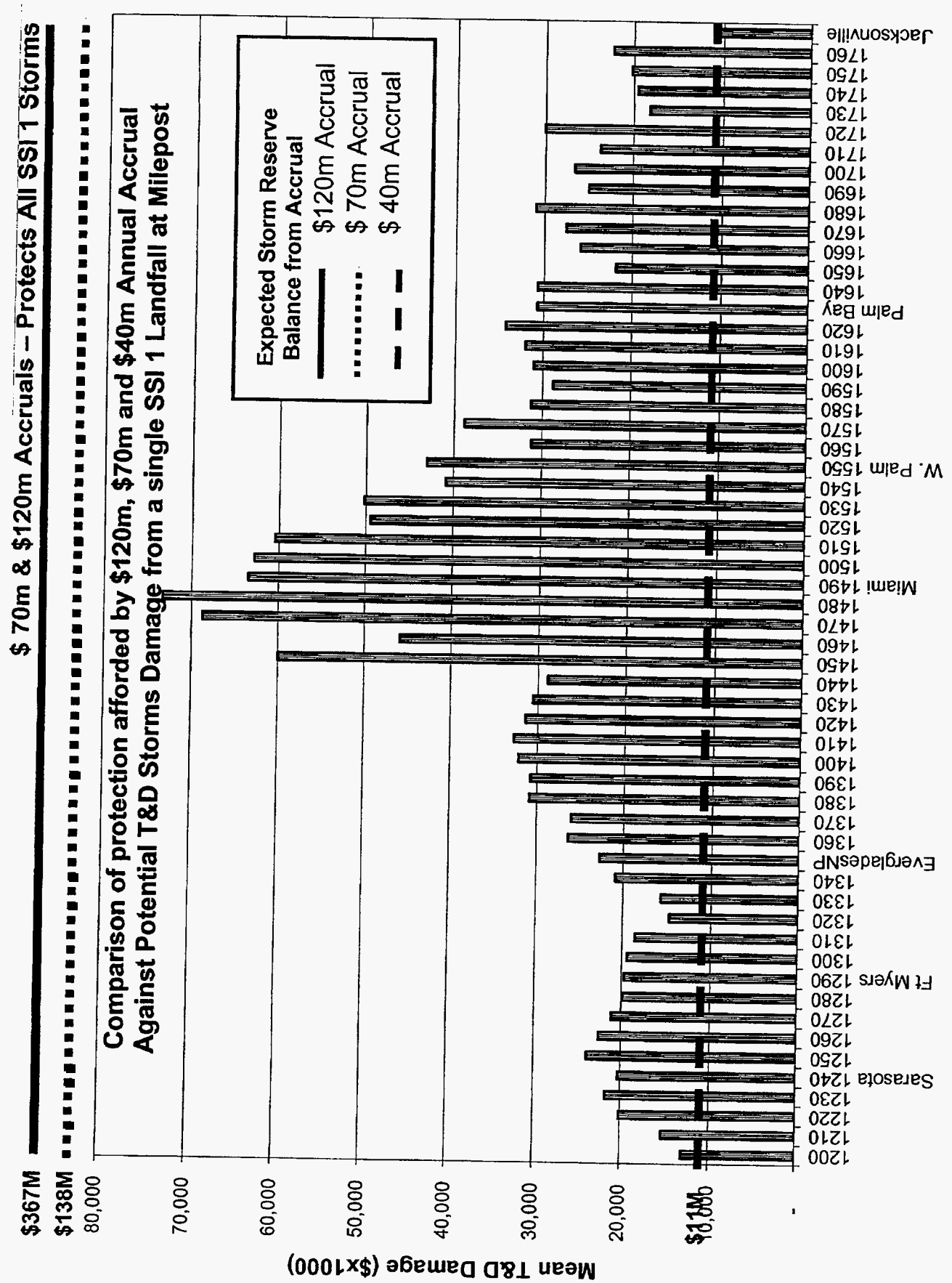
Table 1-1b:

Storm Reserve Fund Analysis Case Results– Two Year Recovery of Negative Balances

| Annual Accrual | Loss recovery | Mean (Expected) Fund Balance at 5 years ($ millions) | Probability of insolvency within 5 years | Probability of insolvency at the end of year 5 | Probability of Fund Balance in excess of $500 million in 5 years |
|---|---|---|---|---|---|
| $ 20.3 million | 2 year recovery | ($71) | 79% | 48% | 0% |
| $ 35 million | 2 year recovery | ($15) | 68% | 35% | 0% |
| $40 million | 2 year recovery | $11 | 64% | 30% | 0% |
| $70 million | 2 year recovery | $138 | 50% | 17% | 0% |
| $120 million | 2 year recovery | $367 | 34% | 8% | 39% |

Comparison of Protection Afforded by $120 million, $70 million and $40 million Annual Accrual




$ 70m & $120m Accruals – Protects All SSI 1 Storms
$367M
$138M
Comparison of protection afforded by $120m, $70m and $40m Annual Accrual
Against Potential T&D Storms Damage from a single SSI 1 Landfall at Milepost
Expected Storm Reserve Balance from Accrual
$120m Accrual
$ 70m Accrual
$ 40m Accrual
Mean T&D Damage ($x1000)
80,000
70,000
60,000
50,000
40,000
30,000
20,000
$1M
-
1200
1210
1220
1230
Sarasota 1240
1250
1260
1270
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Ft Myers 1290
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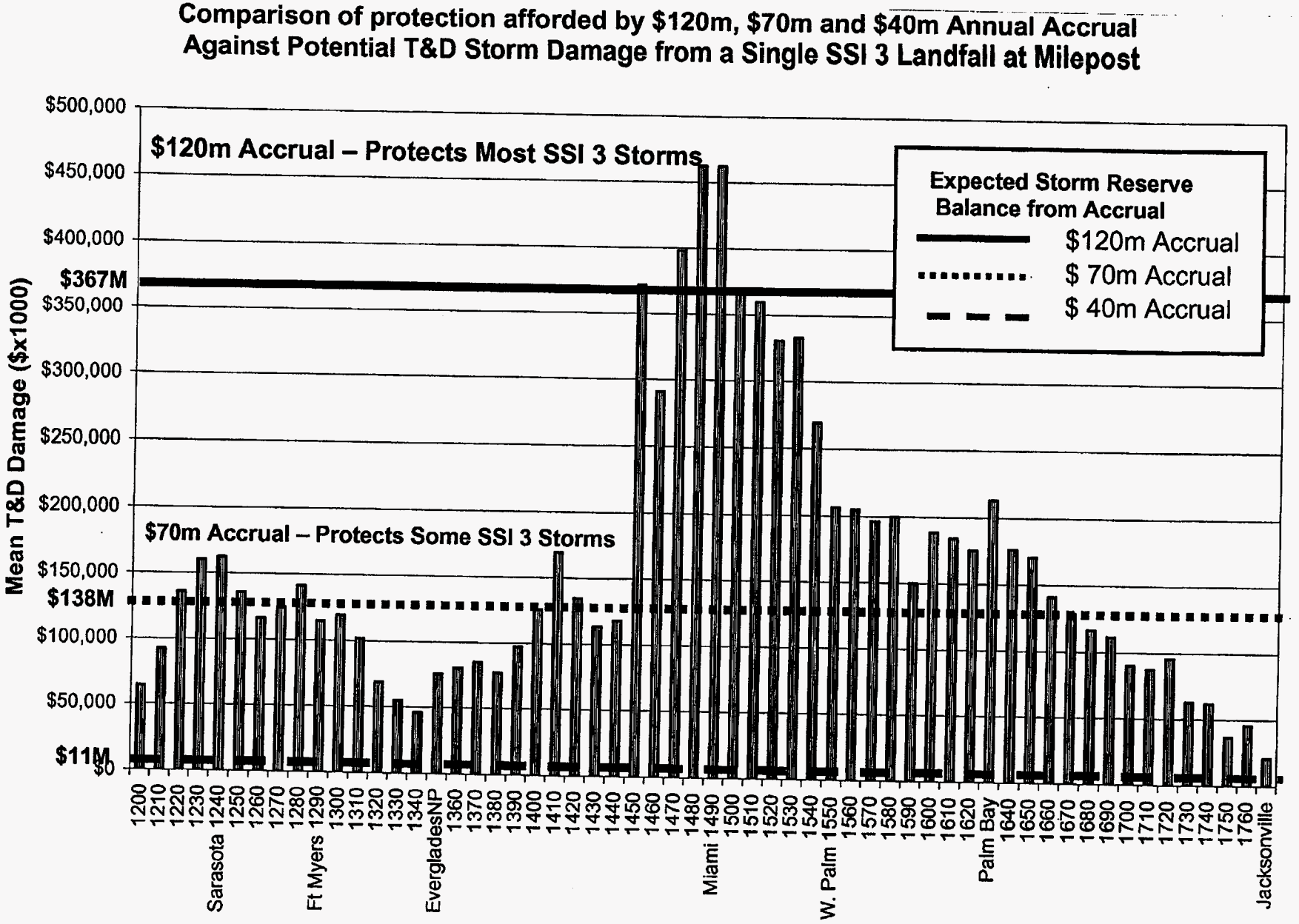


Docket Nos. 050045-EI, 050188-EI
S. Harris, Exhibit No. ____
Document No. SPH-4
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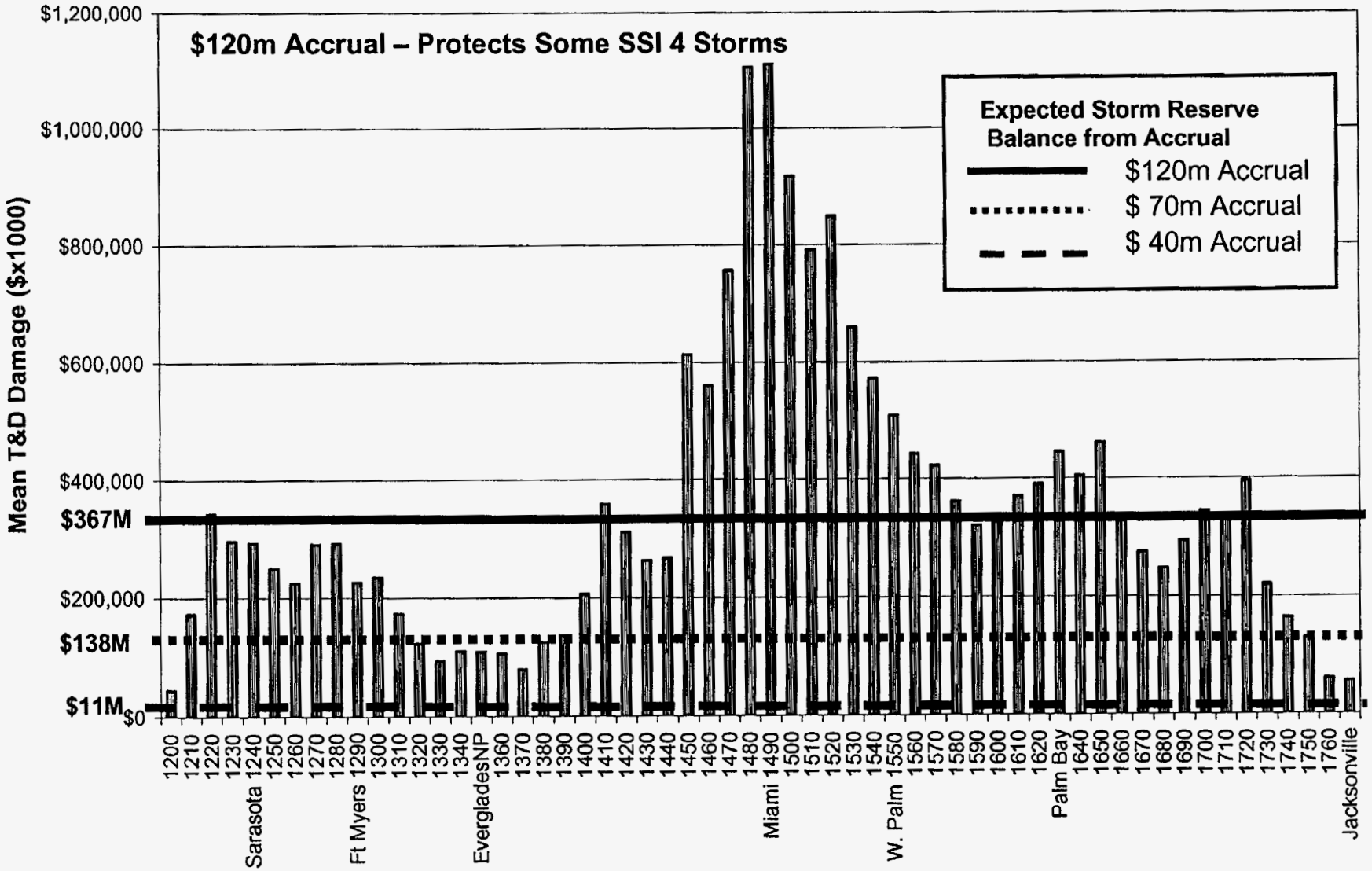
Comparison of Protection Afforded by $120 million, $70 million and $40 million Annual Accrual

## Comparison of protection afforded by $120m, $70m and $40m Annual Accrual Against Potential T&D Storm Damage from a Single SSI 4 Landfall at Milepost

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Comparison of Protection Afforded by $120 million, $70 million and $40 million Annual Accrual