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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION RECEIVED-FPSC

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In re: Petition for Approval of Revisions to Contribution-in-Aid-of Construction Definition in Section 12.1 of First Revised Tariff Sheet No. 6.300, by Florida Power & Light Company)	Docket No: 060150-EI COMMISSION CLERK
In re: Proposed Rules Governing Placement of New Electric Distribution Facilities Underground, and Conversion of Existing Overhead Distribution Facilities to Underground Facilities, to Address Effects of Extreme Weather Events)	DOCKET NO. 060172-EU
In re: Proposed Amendments to Rules Regarding Overhead Electric Facilities to Allow More Stringent Construction Standards Than Required by National Electric Safety Code)	DOCKET NO. 060173-EU FILED: NOVEMBER 13, 2006

NOTICE OF FILING COST-EFFECTIVENESS STUDY OF UNDERGROUNDING ELECTRIC DISTRIBUTION FACILITIES BY THE TOWN OF PALM BEACH, FLORIDA AND THE TOWN OF JUPITER ISLAND, FLORIDA

The Town of Palm Beach, Florida ("Palm Beach"), and the Town of Jupiter Island, Florida ("Jupiter Island"), collectively referred to herein as the "Towns," hereby give notice that they have today filed sixteen (16) copies of the report entitled Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida ("UG Cost-Effectiveness Study") with the Commission Clerk. Both of the Towns are intervenors in Docket No. 060150-EI, and both are also participants in the Commission's rulemaking dockets relating to strengthening Florida's electric distribution infrastructure, including undergrounding, i.e., the above-styled Docket No. 060172-EI and Docket No. 060173-EI.

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FPSC-COMMISSION CLERK

As previously explained by the Town's undersigned counsel, this report was prepared by PowerServices, Inc. for the Municipal Underground Utilities Consortium, an organization in which the Towns are participating members. As previously committed by the Town of Palm Beach (in its Notice of Withdrawal of Motion for Abeyance, filed in Docket No. 060150-EI on October 5, 2006), the Towns' counsel furnished an electronic copy of the UG Cost-Effectiveness Study to FPL and to the Commission Staff on November 6, 2006.

The Towns request that the UG Cost-Effectiveness Study be filed in Docket No. 060150-EI. Per discussions with counsel for the Commission Staff, the Towns request that the UG Cost-Effectiveness Study also be cross-referenced in the Document Index Listings for Docket No. 060172-EI and Docket No. 060173-EI. The Towns make this request in the event that the Commission or Commission Staff, or any other party, wish to consider the UG Cost-Effectiveness Study in connection with these rulemaking dockets.

Respectfully submitted this 13th day of November, 2006.

Robert Scheffel Wright
John T. LaVia, III
Young van Assenderp, P.A.
225 South Adams Street, Suite 200
Tallahassee, Florida 32301
(850) 222-7206 Telephone
(850) 561-6834 Facsimile

Attorneys for the Town of Palm Beach, Florida, and the Town of Jupiter Island, Florida

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Notice of Filing has been furnished by electronic Mail (without the UG Cost-Effectiveness Study) and by hand-delivery(*) or by U.S. Mail (with a copy of the UG Cost-Effectiveness Study) this 13th day of November, 2006, to the following:

Larry Harris*
Roseanne Gervasi
Florida Public Service Commission
Division of Legal Services
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399

Harold A. McLean
Charles J. Beck
Joseph A. McGlothlin
Patty Christensen
Office of the Public Counsel
111 West Madison Street
Room 812
Tallahassee, Florida 32399

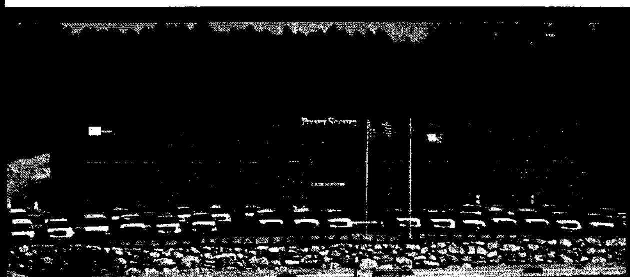
John T. Butler
Florida Power & Light Company
700 Universe Blvd.
Juno Beach, FL 33408

Robert Scheffel Wright
Attorney

COST-EFFECTIVENESS OF UNDERGROUNDING ELECTRIC DISTRIBUTION FACILITIES IN FLORIDA

Prepared By: PowerServices, Inc.
For: Municipal Underground Utilities Consortium

November 2006



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Power Services
Management Services For Utilities®

1609 Heritage Commerce Court
Wake Forest, NC 27587
Tel: 919-453-1756
Fax: 919-453-1768

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COST-EFFECTIVENESS OF UNDERGROUNDING ELECTRIC DISTRIBUTION FACILITIES IN FLORIDA

EXECUTIVE SUMMARY

Introduction and Background

From 1960 until 2000, Florida experienced relatively few significant strikes by named hurricanes and tropical storms. The most notable exception was Hurricane Andrew in 1992. However, in 2004 and 2005 Florida experienced unprecedented hurricane and tropical storm impacts. Ten named storms - Arlene, Bonnie, Charley, Frances, Jeanne, Ivan, Dennis, Katrina, Rita, and Wilma - struck Florida in those two storm seasons. The impacts on human lives and property were extensive and severe. Extended power outages disrupted life and economic activity for days, and even weeks. Many experts believe that the 1960-2000 period was a low cycle of hurricane activity, and that the state is now entering a period where more storms, and likely more severe storms, are expected.

Following the 2004 storm season, the Florida Public Service Commission ("PSC") published an updated report on undergrounding distribution facilities, which consisted mainly of updating cost information from a report done 13 years earlier Florida Public Service Commission, Preliminary Analysis of Placing Investor-Owned Electric Transmission and Distribution Facilities UNDERGROUND in Florida - March 2005. However, following the 2005 storm season, the PSC began a series of activities to examine ways of strengthening or "hardening" Florida's electric distribution infrastructure to be more resistant to the damages of storms in order to reduce the storms' consequences on Floridians. The PSC's activities began with workshops and quickly evolved into rulemaking dockets that are still in progress as of the date of publication of this report. The 2005 Florida Legislature enacted comprehensive energy legislation, which required, among other things, that the PSC conduct a review to determine what should be done to enhance the reliability

reliability of Florida's transmission and distribution grids during extreme weather events, including the strengthening of distribution and transmission facilities. Considerations may include:

(a) Recommendations for promoting and encouraging underground electric distribution for new service or construction provided by public utilities.

(b) Recommendations for promoting and encouraging the conversion of existing overhead distribution facilities to underground facilities, including any recommended incentives to local governments for local-government-sponsored conversions.

(c) Recommendations as to whether incentives for local-government-sponsored conversions should include participation by a public utility in the conversion costs as an investment in the reliability of the grid in total, with such investment recognized as a new plant in service for regulatory purposes.

(d) Recommendations for promoting and encouraging the use of road rights-of-way for the location of underground facilities in any local-government-sponsored conversion project, provided the customers of the public utility do not incur increased liability and future relocation costs.

Section 19, subparagraph (2), Senate Bill 888 (2006). The PSC's report is to be submitted to the Governor, the President of the Senate, and the Speaker of the House of Representatives by July 1, 2007.

Contemporaneously, Florida Power & Light Company ("FPL"), the largest electric utility in Florida, initiated its "Storm Secure" Plan, in which FPL proposed certain "infrastructure hardening" initiatives and modifications to its tariffs that govern conversions from existing overhead ("OH") distribution facilities to underground ("UG") facilities, and in which FPL also proposed certain related amendments to the PSC's rules applicable to electric service.

In the course of these proceedings and activities, a group of Florida cities and towns came together to form the Municipal Underground Utilities Consortium ("Consortium" or "MUUC"), with its primary purpose being to support a substantial study of the cost-effectiveness of undergrounding electric distribution facilities considered on a life-cycle basis. PowerServices, Inc. was engaged by Young van Assenderp, P.A. ("YVA"), as special counsel on behalf of the Consortium, to perform the desired cost-effectiveness analyses. Thus, the analyses in this report, Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida, address the total costs and benefits – not only the initial installation costs of UG vs. OH facilities, but also the differences in operating and maintenance costs - associated with UG and OH facilities.

In Florida's regulatory framework the costs of OH service, which has been and continues to be the utilities' "standard of service", are borne by all customers. (Since approximately 70 percent or all new distribution facilities in Florida are being installed underground, it is apparent that customers prefer UG as their "standard of service.") The additional costs of UG facilities are apportioned between the utility and its "general body of ratepayers" (i.e., all customers of the utility) pursuant to tariffs that require customers who desire UG service to bear part of the additional installation (or capital investment) costs by paying a Contribution In Aid of Construction ("CIAC"). Under present rules and tariffs, the required CIAC is effectively equal to the difference in the installed cost of the UG facilities minus the estimated installed cost of OH facilities. (In actual CIAC calculations, removal costs, the net book value of removed facilities, and salvage values are also taken into account.) Under proposals advanced by FPL in its "Storm Secure" filings and also under proposals embodied in rules that have been proposed by the PSC, the CIACs would be adjusted to reflect differences in the long-term operating and maintenance costs of UG vs. OH distribution facilities. This report provides analyses of all relevant costs and benefits of undergrounding, and is intended to be used, both directly and as a pattern or template, for calculating and determining appropriate CIACs for OH-to-UG conversion projects in Florida.

It is undisputed that underground power lines cost more to construct (in most but not all cases) than comparable overhead power lines. This report addresses the direct, quantifiable costs and benefits of installing, operating, and maintaining underground power lines in lieu of overhead power lines in the context of electric infrastructure life cycles and environmental conditions in Florida. However, the social and long-term economic benefits of underground power lines are well known. The report also addresses non-quantifiable benefits to utility customers and general economic benefits to Florida as a whole.

The destruction wreaked by hurricanes and tropical storms in Florida is all too well known to every Floridian. The impacts of hurricanes and tropical storms, as well as the impacts of severe summer thunderstorms and unnamed storm systems (like the "Perfect Storm" of 1991) are also well documented and a "fact of life" that Florida utilities will continue to encounter. A utility can choose to continue to do business as it has always done and reconstruct its OH system with each storm at enormous cost to the utility, its ratepayers, and the citizens and communities its serves. Conversely, a utility and the communities it serves can take a proactive role in mitigating the adverse impacts associated with massive storm related outages and the economic costs imposed on the utility and the communities. Overhead power lines can be hardened by applying the latest National Electrical Safety Code (NESC) standards and other known and accepted practices to reduce the vulnerability of the power lines to storms. Even though OH systems can be hardened to withstand wind speeds of Category 3 and higher storms, they generally will be disabled in such storms due to damage from windblown vegetation and other flying debris. Alternatively, OH power lines can be placed underground, thus providing maximum mitigation of storm (hurricane) damage and associated outages.

For the cost of UG conversions to be appropriately shared among the interested and benefiting parties, and for municipalities and other customer groups to be given proper incentives to undertake UG conversions, an appropriate methodology reflecting all costs and benefits of UG conversions must be developed and implemented. An adjustment in the customary CIAC methodology is the appropriate mechanism in which to reflect the benefits of placing electric utilities underground.

Description of Analysis

The study of the relative costs and benefits of UG vs. OH facilities, and the development of the appropriate adjustment methodology and CIAC levels, was approached from an average overall system basis. It is recognized that additional adjustments on a site-specific basis will be required in many cases. These site-specific adjustments do not need to take the form of numerically specified charges, but may be recognized conceptually in utility tariffs for inclusion in CIAC calculations where they are warranted. These adjustments and the methods used to develop them are summarized in this Executive Summary, addressed in more detail in the body of the report, and further detailed in the Appendices.

The initial phase of the analysis included the development of an extensive data request submitted to FPL, the review and utilization of FPL's responses, review of other industry information, and site visits to five (5) municipalities in Florida that represented a cross section of the types of municipal environments and varied overhead to underground conversion issues, which would be encountered by FPL and other Florida utilities. This includes such items as demographics, location, types of construction, physical constraints, and overall electric system differences. Additionally, a site visit was made to Brunswick Electric Membership Corporation ("BEMC"), a cooperative utility serving the barrier island region of southeastern North Carolina with topography similar to coastal Florida. BEMC has completed an extensive OH to UG conversion project based on an approved and funded Federal Emergency Management Administration (FEMA) hurricane hazard mitigation project and has had an ongoing undergrounding effort since the early 1990s. This region has experienced major storms and hurricanes since the undergrounding effort was undertaken with a near 100% success rate with regard to improved storm restoration and reliability improvement. A more detailed discussion of these visits is contained later in the report.

Upon completion of the site visits and review of FPL's data responses and other industry information, a CIAC calculation methodology and model were developed. The construction cost estimates were prepared based on multiple scenarios to represent the average electric system conditions encountered in a municipal environment. These included:

1. three-phase large and small conductor construction;
2. single-phase line construction;
3. single- and three-phase transformers/transformer banks;
4. service conductors estimated for typical load size;
5. sectionalizing and switching; and
6. street lighting.

The removal of existing overhead facilities was also considered as part of converting existing OH facilities to hardened OH or to UG facilities. (The "hardening" standards used were the NESC extreme wind criteria applicable for coastal Florida.) Cost estimates for UG construction, OH construction, and OH removal per mile were prepared for three-phase high-density (100 services per mile) areas, three-phase low-density (50 services per mile) areas, single-phase high-density areas, single-phase low-density areas, high- and low-density street lighting, three- and single-phase overhead removals, and services installations based on different conductor sizes.

A detailed cost estimate associated with each type of construction was developed for both a hurricane-hardened overhead line and its equivalent underground line on a per mile basis. To determine a representative mix of the different areas or densities involved for a typical construction area, costs per mile for the different construction types were added together along with associated services, street lighting, and existing overhead removals. These were then divided by the total mileage to obtain an average cost for UG and for OH construction.

The average installed cost differential per mile for the UG and OH construction scenarios establishes the base "average system" conversion cost to be used as the starting point for calculating CIACs. In the methodology developed herein, which is effectively the same as that reflected in the PSC's proposed rules addressing these matters (see Order Number PSC-06-0556-NOR-EU, issued on June 28, 2006), the cost of hardened OH facilities is first subtracted from the cost of UG facilities; without any further adjustments this amount would be the CIAC. This difference is then adjusted by additional, quantifiable differentials between the costs of operating and maintaining UG vs. OH systems. Where the operating and maintenance (O & M) costs for UG facilities are less than the comparable costs for OH facilities, e.g., storm restoration and tree-trimming costs, these cost differences represent savings that a utility's general body of customers will realize from UG conversions, and accordingly, these differences are subtracted from the "starting point" to arrive at an appropriate "net" CIAC that fairly reflects the value to the utility and its general body of customers of having the UG conversion projects done. Thus, the average installed cost differential may also be used as the denominator for the development of a CIAC percentage adjustment to reflect the long-term economic benefits of converting overhead power lines to underground. The cost estimates reflect the utilization of data from FPL, other prior studies, and the PowerServices team's extensive experience not only in developing project cost estimates but also, and even more importantly, with actually designing and providing construction management on many comparable projects which have been successfully completed.

First, a detailed list of benefits was prepared. The benefits were then divided into three categories:

1. quantifiable average system benefits;
2. project and site specific benefits; and
3. qualitative (non-quantifiable) benefits

Category 1 was used to develop the benefit adjustments to CIACs – based on and reflecting the cost savings to the utility and its general body of customers that are realized through UG conversions - that are recommended in this report. Category 2 is a list of issues and benefits that must be addressed as part of any utility's UG vs. OH cost estimate development for each specific project area. In some cases, site-specific conditions will cause there to be greater benefits from UG conversions, and in some instances, these benefits will eliminate all or most of the CIAC required for a specific UG conversion project. Category 3 consists of items that are benefits to the community (such as enhanced reliability of healthcare, traffic control and other utilities, aesthetics, and environmental amenities), which make it worthwhile for the municipality to expend dollars for CIAC.

Quantifiable direct benefits include:

1. reduction in restoration costs following hurricanes, tropical storms, and other weather events;
2. reduction in O & M expenses;
3. reduction in accident litigation and award costs; and
4. reduction in lost revenues (which corresponds to increased sales and thus reduced rates in the long run).

Project site-specific conditions and benefits from UG conversions may include the following.

1. Undergrounding is the only solution for NESC hazard violation remediation.
2. Undergrounding is the least expensive and most effective NESC hazard-violation mitigation.

3. Due to rear-lot-line and other construction area constraints, underground conversion or overhead relocation at much higher cost are the only alternatives.
4. Three-phase commercial or industrial area service and conversion is more economically accomplished with UG facilities.
5. An array of combinations and iterations of the four above cost differential issues.

Conditions producing these benefits will, from time to time, be encountered in the OH line upgrade, maintenance, and hardening construction. When cost and CIAC estimates are prepared, the impact of these OH line costs and construction constraints will substantially lower the OH to UG cost differential. In some cases, it may bring the differential cost to zero, indicating that no CIAC should be charged.

As used in this report, the term "qualitative benefits" means real, tangible benefits realized from UG conversions that are not directly captured or reflected in the costs borne, or in the benefits realized by, the utility and its general body of customers. These qualitative benefits include the following.

1. Improved health and safety during and after storms due to fewer power outages and more rapid power restoration. Emergency management personnel recognize the level of an emergency is substantially reduced when utilities, particularly power, are restored quickly or never interrupted. These benefits may include: maintaining service to critical care facilities and health care equipment, traffic control devices, fire suppression systems, public area lighting (especially important for nighttime restoration efforts), and other utilities, such as water, wastewater, and telecommunications services; reduced perishable food and other product losses; enhanced security and

protection from crime and looting; and enhanced public perception of safety and security.

2. Life safety.
3. Aesthetics.
4. Reliability.
5. Enhanced Economic Development and Reduced Economic Disruptions Due to Storms.
6. Environmental Benefits (trees/land).
7. General Community Enhancement.

The quantifiable benefits have been computed for each item. Section 2 discusses this in greater detail, and Appendices A through J provide the supporting calculations and data. The approach has been to utilize, to the maximum extent possible, FPL data and other data commonly available in the industry. The analysis has been done conservatively and balanced to reflect a real system average CIAC adjustment that could be fairly incorporated in a tariff. The site-specific issues and calculation adjustments can be easily handled as part of the development of the overhead to underground cost estimates and differential that is applicable before the CIAC adjustment percentage. The following table summarizes the results of this report and its analysis.

OVERHEAD to UNDERGROUND CONVERSION CIAC CALCULATION
(Costs and adjustments on a per mile of conversion basis)

New Underground Cost	$1,192,172
New Hardened Overhead Cost	$356,858
(Minus Book Value Plus Salvage, if Applicable)	-
Base Conversion Cost Differential	$835,314.00

Conversion Benefit Adjustments to CIAC		Fixed Percentage Adjustments (%)	Fixed Cost Adjustments (dollars)
Outage Restoration Reduction	- Non-major events	5.60%	$46,775.42
	- Major Events	23.68%	$197,791.32
Reduced Revenue Losses	- Non-major events	0.13%	$1,109.25
	- Major events	2.45%	$20,443.99
Reduced O&M Costs	- Vegetation Management	8.96%	$74,808.42
	- Other O&M**	1.19%	$9,960.00
Cost of UG Locates		-0.78%	($6,540.00)
Loss of Pole Attachment Revenue		-1.11%	($9,300.00)
Reduced Accident Litigation & Award Payments		10.43%	$87,109.28
Non-Participant Benefit (Qualitative Others)		-	
Elimination of NESC (Code) Violations		-	
Elimination of Overhead Routing Problems		-	
Fixed Adjustments		50.54%	$422,157.68

** Other O&M From FPL Data Responses Reflects Higher O&M for Underground / Mile
PowerServices Inc. Estimates Reflect Improved O&M Cost for Underground Based on Improved Technology and other utility experience

Therefore, this report recommends an appropriate "base" CIAC adjustment (i.e., based on typical or average conditions and without taking site-specific conditions into account) percentage to be 50.54%. Thus, a $1,000,000 OH to UG cost differential would be reduced to $494,600 using the CIAC adjustment factor [CIAC x (1 - adjustment factor) = payment]. For site specific conditions, the CIAC calculations should include additional benefits realized due to elimination of NESC violations, elimination of OH routing problems, and additional savings realized where the project involves an above average percentage of rear-lot-line OH construction.

There are also additional qualitative benefits that will accrue to the citizens and utility customers served by substantial UG conversion projects; these will likely not be captured in the utility's accounts and directly reflected in the utility's rates, but they are real nonetheless.

Finally, this report provides estimates, based on the conventional utility reliability analysis methodology known as Expected Unserved Energy ("EUE") analysis, of the real economic value that may be realized by Florida's residents and businesses from reduced outages. Using reasonable assumptions based on FPL's outage experiences from 2001 through 2005, and extrapolating for other utilities that were impacted by named storms in 2004 and 2005, and also using values reported in the literature of utility economics and utility engineering economics, it is not unreasonable to estimate that the economic value that would have been realized, just in 2004 and 2005, had Florida's electric infrastructure been largely underground, would have been on the order of $50 billion.

EXECUTIVE SUMMARY (CONTINUED)

Team Experience

The PowerServices, Inc. team that prepared this report includes professionals with nationwide electric utility experience and comprises services to over 300 utility industry clients in 40 states, including investor-owned utilities, municipal and cooperative utilities, state regulatory commissions, and statewide, regional, and national utility organizations. The team includes a member of the IEEE Distribution System Reliability Subcommittee on IEEE Standard 1366-2003, former electric utility managers, a former city manager, utility system directors, and statewide power agency board members.

The primary team members assembled to conduct the various tasks on the project include:

Team Member	Years of Electric Utility Experience
Gregory L. Booth, PE	40
R.L. Willoughby, MBA	40
D. Steven Hodgin	37
Harry G. Buckner	36
Dr. William Watson, Ph.D.	31
H. Michael Taylor, PE	30
Peter J. Rant, PE	16

ELECTRIC INFRASTRUCTURE REVIEW (EXISTING CONDITIONS)

Site Review

On July 17, 18, and 19, 2006, PowerServices staff visited and observed electric distribution facilities in five (5) municipalities in Florida that are interested in having their electric utilities placed underground. They were the Town of Palm Beach, Town of Jupiter Island, City of Melbourne, City of Plantation, and City of Naples. These cities represented a reasonable characterization of the demographics, location, and distribution design of the cities and towns interested in placing their facilities underground. They all had one central theme, which was to place their overhead lines underground, but each one's approach to doing that would be significantly different. Following are discussions regarding the unique characteristics for each city and town, how they might go about placing their facilities underground, and some of the issues associated with such. All the city and town representatives expressed an interest in putting their facilities underground over a scheduled, planned time frame. Some cities and towns already had a program in place to put areas underground, and others had pilot projects they were considering in the near future. Since the July site visits, Jupiter Island has proceeded with the installation of a 15-home pilot underground conversion project.

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Town of Palm Beach, Florida

On July 17, PowerServices staff met with representatives of Palm Beach, Florida and toured and visually observed the distribution facilities serving the Town. Based on information from Town staff, Palm Beach has approximately 39 miles of distribution lines in the Town. According to FPL data, Palm Beach has 9,440 electric customers (meters), of which 2,455 are single-family residences. In 1982, the Town passed an ordinance requiring all new electric services, or any upgrade of a dwelling that is a 50% improvement or better to be placed underground. In 2003, Palm Beach had a study done to evaluate the cost of placing existing utility lines underground, and the estimate at that time was $50,000,000 to place all utilities in the Town, including electric, telephone, and cable television, underground. Palm Beach has five sub-aquatic distribution feeders coming into the city to serve the area. Approximately 40% - 50% of the Town was observed during this visit. Since many of the facilities were in rear lots, we estimate approximately 50% of the area surveyed was visible, therefore, about 20% - 25% of the system was observed. All of the lines in Palm Beach are distribution lines. No transmission lines were observed.

Town of Jupiter Island, Florida

After finishing at Palm Beach, PowerServices staff met with representatives of Jupiter Island on July 17, 2006, and toured and visually observed the electric distribution facilities there. Jupiter Island has two primary sub-aquatic feeds to the island. There is one additional feed coming from the south end of the island in a community called Tequesta that may also be used as a possible feed. There were four locations on the island where the property owners had already paid to place lines underground. Jupiter Island is in the process of installing a 15-home UG conversion pilot project. One of the concerns of Jupiter Island staff was that the feeders serving the Town, especially from the north end of the island, are not reliable. These lines would need to be part of any project that places the lines underground including the sub-aquatic feeder, and the overhead lines served from a regulator and autotransformer step-down that FPL furnishes from the mainland. The island is approximately 9 miles long, with approximately 534 electric customers (meters) at present; this will likely increase to approximately 625 residences when the Island is fully built-out. It appears to be a typical barrier island. Jupiter Island, based on our observations, would be a good candidate for placing all the lines underground with adequately sized underground cables with very limited problems relative to major feeds and lateral lines. However, we concur that the feeder lines serving the island need to be evaluated and possibly upgraded at the same time as the facilities on the island are placed underground.

City of Melbourne, Florida

On July 18, 2006, PowerServices staff met with representatives of Melbourne, Florida. Melbourne has approximately 41,000 electric customers (meters), 80% of those are residential. Melbourne also has a Community Redevelopment Agency that is a taxing body for neighborhood improvements. One of the issues that Melbourne has that the other communities visited do not is a significant number of transmission lines. These transmission lines not only serve the residents of Melbourne, but they appear to be part of FPL's statewide transmission grid system. Some of the transmission is new, and some is under construction as of this report. Melbourne would probably be a good location to start with conversion of rear lot OH facilities, beginning with removal and placing the lines underground, then work towards putting the main distribution feeders underground following that, unless there are specific project areas to which the City wants to assign higher priorities.

City of Plantation, Florida

Later in the day of July 18, 2006, PowerServices staff met with representatives of Plantation, Florida. Plantation, Florida has about 84,000 residents, with approximately

40,000 electric customers (meters). Of those, around 36,400 are residential. Most of the distribution lines in Plantation are overhead. There is a small area where there appeared to be some transmission lines, but this was near the edge of the community. Also, in Plantation there are three target areas identified by city representatives that they wanted to consider initially for underground conversion projects. We would recommend phasing of the underground, because there are certain areas where there is a lot of rear-lot construction that was not on main feeder lines. These lines would be much easier to address and work on first, then address the main feeder rear-lot construction afterwards, unless the main feeders were in a target area.

City of Naples, Florida

On July 19, 2006, PowerServices staff met with representatives of the City of Naples staff. The land area of Naples is approximately 16 square miles, and FPL reports that Naples has approximately 22,000 electric customers. Based on the City of Naples staff's estimate, around 30% of Naples is currently underground. Naples has some transmission lines through the city. The areas of the community that have OH rear-lot distribution lines could be transitioned to underground over a planned and coordinated schedule.

Summary of Florida Site Visits

In summary, the areas visited are a good reflection of the variety of existing OH distribution systems in Florida. Some are older and some newer, and the municipalities visited reflected a mix of front-lot and rear-lot construction. Although all of these communities have the same central interest of converting overhead lines to underground, some of the potential conversion projects would be more easily accomplished. However, all of the municipalities could benefit by undergrounding a portion of their existing OH facilities, resulting in improved reliability, aesthetics, and many other public benefits within their community.

Review of Hurricane Experience of Brunswick Electric Membership Corporation (BEMC)

On July 25, 2006, PowerServices staff met with the General Manager of BEMC, the Manager of Operations of BEMC, and the Manager of Engineering of BEMC at the BEMC offices in coastal North Carolina to review specific experiences related to the utility's major underground conversion efforts on four barrier islands which they serve. The cooperative obtained local and FEMA funding to convert approximately 88 miles of overhead 12.47/7.2 kV distribution lines to underground after experiencing several major and minor hurricanes in the early and mid-1990s. The major portion of the project was completed in late 2004, and took about 3 years, with follow-up work in other areas.

While the area has not suffered a major hurricane strike since the FEMA funded UG conversion project was completed in 2004, it has been exposed to many storms similar to those frequently encountered in Florida, and it sustained a direct hit from Tropical Storm Ernesto in 2006. In qualitative terms, BEMC senior management reported the following results:

- reduced number and duration of outages due to lightning, animals, and other contacts;
- elimination of problems associated with salt spray, e.g., transformer and hardware corrosion and short circuiting due to salt accumulation;
- significant reduction in restoration times and costs;
- improved restoration of OH facilities elsewhere on the system following storms due to re-allocation of resources to inland overhead areas of the system;
- elimination of nearly all right-of-way tree-trimming and clearing costs in the areas converted from OH to UG; and

- elimination of all clearance and maintenance problems that had been associated with overhead rear lot line construction (the lines were moved to the street frontage when they were placed UG)

Based on these results, BEMC senior management also reported realizing some savings not even accounted for in the original projections.

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COSTS AND BENEFITS OF UNDERGROUNDING DISTRIBUTION FACILITIES

This section addresses the costs and benefits of installing, operating, and maintaining UG facilities and OH facilities on a life-cycle cost basis. The analysis addresses initial installation costs for both UG and OH distribution facilities and also quantifies, to the extent practicable, the differences in operating and maintenance ("O&M") costs between UG and OH systems. This section also addresses additional economic benefits of undergrounding that (a) are best quantified on a case-by-case, site-specific or project-specific basis, and (b) are real but difficult or impossible to quantify. Finally, the section addresses, and provides quantitative estimates of, real economic benefits accruing to the general public through outage reductions that can reasonably be expected to result from substantial, wide-area undergrounding projects such as those contemplated by a number of the MUUC's members. (These are addressed in a separate section because they are benefits that accrue to the public generally but are not directly captured or reflected in a utility's accounts.)

In summary, all agree that the initial installation cost of UG distribution facilities is greater (in most, but not all cases) than that of OH facilities. Correspondingly, nearly all engineers and other analysts agree that the long-run O&M costs of UG systems are less than the corresponding costs for OH facilities. This discussion quantifies estimates of the differences in initial UG vs. OH construction costs and of the differences in several categories of O&M costs, including:

a. storm restoration costs;
b. non-storm-related O&M costs;
c. reduced litigation costs and damages awards and settlements; and

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d. reductions in lost revenues that accrue to the utility's and its general body of customers' benefit through higher sales and thus lower rates in the long run.

There are additional "qualitative" benefits that are identified and discussed, but which are more difficult to quantify. Also, site-specific conditions that may increase the benefits of undergrounding are identified, but because they are site-specific by their very nature, they are simply identified as factors that need to be considered in any specific CIAC calculation.

Considering only the direct costs reflected in utility accounts and rates, CIACs are appropriately equal to the difference between the life-cycle costs of UG vs. OH facilities, including the differences between the initial installation costs and any additional O&M cost differences between UG and OH facilities. Where certain O&M cost components, e.g., storm restoration costs and tree-trimming costs, are less for UG than for OH facilities, that difference is properly applied to reduce the CIAC that should be paid for a UG installation (whether conversion or new installation). This treatment will result in the general body of customers paying the same, on a life-cycle cost basis, whether the facilities are underground or overhead, and the UG-served customers paying the difference in the form of a net CIAC. It is particularly important to incorporate these benefits into the CIAC calculations, because otherwise, customers who pay CIACs will subsidize the utilities' other customers.

Additionally, of course, under this "strict" treatment that includes <u>only</u> direct utility costs, considering that the general body of utility customers corresponds virtually 100% to the general public, all of the additional, non-quantifiable benefits that are provided to the general public or the Florida economy at large are realized and enjoyed by all without paying any more than the equivalent cost of installing and operating overhead facilities.

Thus, PowerServices, Inc. evaluated initial construction costs for UG and OH systems and also calculated appropriate CIAC credits for differential O & M costs and revenue impacts to be applied to the construction cost difference between installing UG electric distribution facilities and OH "hardened" facilities. These credits should apply in every situation that electric facilities are installed underground.

For some site-specific situations, there will be circumstances that substantially increase the cost of OH construction that would reduce the cost difference between UG and OH systems prior to applying a CIAC credit. For example, if a section of utility line does not meet the requirements of the NESC or other regulatory requirements, then the utility should receive no consideration for remaining life of the overhead lines when calculating the base cost differential in underground versus overhead or for the cost of removing such facilities. This is because the facilities, being in violation of the NESC, would have to be removed and replaced anyway. In addition, if it is determined that overhead lines cannot be reasonably rebuilt in place because of development, vegetation problems, or other issues that have evolved since the initial installation, and underground is the best reasonable option, the cost difference between underground and overhead – thus any CIAC - should be zero.

The information used to calculate the CIAC credits included responses by FPL to interrogatories and requests for production of documents in PSC Docket No. 060150 - EI (in which FPL has proposed a generic 25% CIAC credit for government-sponsored UG conversions), 2005 FERC Form 1 data, other industry information and the PowerServices team's experience in designing, estimating, operating, and managing electric systems.

A. Direct Costs and Benefits to Utilities and Their Customers

Direct costs and benefits to utilities and their customers are those that are reflected in the utility's accounts and that ultimately have an impact on the utility's earnings and rates. Obviously, the costs of constructing OH and UG facilities are reflected in the utility's plant accounts, and are thus reflected in normal utility ratemaking. Also obviously, where the utility incurs reduced storm restoration costs or reduced tree-trimming costs from a UG project, the utility's costs will be reduced with corresponding direct benefits to the utility and its customers. This section addresses all of the direct utility costs that should be considered in evaluating cost-effectiveness of UG installations (whether conversions or new installations) and in calculating appropriate CIACs.

1. Construction Cost Estimates

To determine a representative per mile cost for underground and overhead conversion construction, the PowerServices team was tasked with assimilating a "typical" FPL system wide estimate of new construction cost, existing facilities removal, street lighting, and services which would be required. Realizing that no one type of construction would be a "typical" construction, i.e. three-phase or single-phase, it was determined that a combination of types averaged would represent the best scenario for a one mile area or section of line. To this end, PowerServices first established a high-density area as averaging 100 services per mile and low density (as used by FPL) at 50 services per mile. Construction types were then determined for each density area. The following is a listing and description of construction and density types (per mile) used for these cost estimates.

- Three-phase high density main feeder underground area utilizes 1000 kcmil Aluminum 25 kV cable for 60% of the feeder length with 1/0 AWG Aluminum 25 kV cable for the remaining 40% of the feeder length. Estimate includes trench, conduit (direct buried), switches, single-phase and three-phase transformers, and miscellaneous materials.
- Three-phase high density local feeder underground area utilizes 1/0 AWG Aluminum 25 kV cable. Estimates include trench, conduit (direct buried), junction cabinets, single-phase and three-phase transformers, and miscellaneous materials.
- Three-phase low density local feeder underground area utilizes 1/0 AWG Aluminum 25 kV cable. Estimates include trench, conduit (direct buried), junction cabinets, single-phase and three-phase transformers, and miscellaneous materials.
- Single-phase high density local feeder underground area utilizes 1/0 AWG Aluminum 25 kV cable. Estimate includes trench, conduit (direct buried), junction cabinets, single-phase transformers, and miscellaneous materials
- Single-phase low density local feeder underground area utilizes 1/0 AWG Aluminum 25 kV cable. Estimates include trench, conduit (direct buried), junction cabinets, single-phase transformers, and miscellaneous materials.
- Three-phase high density main feeder overhead area utilizes 556.6 kcmil ACSR conductor for 60% of the feeder length and 1/0 AWG ACSR for the remaining 40% of the feeder length. Estimate

includes 36 poles per mile, single-phase and three-phase transformer banks, guying and miscellaneous materials.

- Three-phase high density local feeder overhead area utilizes 1/0 AWG ACSR conductor. Estimate includes 36 poles per mile, single-phase and three-phase transformer banks, guying and miscellaneous materials.
- Three-phase low density local feeder overhead area utilizes 1/0 AWG ACSR conductor. Estimate includes 25 poles per mile, single-phase and three-phase transformer banks, guying and miscellaneous materials.
- Single-phase high density overhead area utilizes 1/0 AWG ACSR conductor, 36 poles per mile, single-phase transformers, guying and miscellaneous materials.
- Single-phase low density overhead area utilizes 1/0 AWG ACSR conductor, 25 poles per mile, single-phase transformers, guying and miscellaneous materials.
- Three-phase high density removals of existing overhead facilities utilizes 36 poles per mile, 556.6 kcmil ACSR overhead conductor for 60% of feeder and 1/0 AWG ACSR for 40% of feeder length, pole top assemblies, transformers, and miscellaneous materials.
- Three-phase low density removals of existing overhead facilities utilizes 25 poles per mile, 1/0 AWG ACSR overhead conductor, 25 poles per mile, single-phase and three-phase transformer banks, guying, and miscellaneous materials.
- Single-phase high density removals of existing overhead facilities utilizes 36 poles per mile, 1/0 AWG ACSR conductor, pole top assemblies, transformers and miscellaneous materials.
- Single-phase low density removals.

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- Single-phase low density removals of existing overhead facilities utilizes a 25 poles per mile, 1/0 AWG ACSR conductor, pole top assemblies, transformers, and miscellaneous materials.
- Street lighting underground feed utilizes 35 lights per mile. Estimate includes lights on new wood poles, mast arms, 250W HPS lights, hand holes, conduit and conductor.
- Street lighting overhead feed utilizes 35 poles per mile, including mast arms with 250W HPS lights attached to existing overhead pole line and service conductor.
- Underground services utilizes 4/0 triplex, 4/0 quadraplex, and 350 triplex conductors, including direct burial trench. Services are based on 100 feet each, and are calculated per density area on the typical construction summary.
- Overhead services utilizes 2/0 triplex, 4/0 triplex, 4/0 quadraplex, and 350 quadraplex conductors and include a lift pole. Services are based on 100 feet each and are calculated per density area on the typical construction summary.

All estimates were based on the following assumptions or limitations.

- No right-of-way acquisition costs were included for either hardened OH or UG.
- No right-of-way clearing costs were included.
- All underground construction is to be installed per the open trench method. No directional boring costs are included. No special roadway, driveway, or railroad crossings are involved.
- All overhead construction is hardened for NESC extreme wind conditions and standards, including wind gust factors.

- All underground construction cost estimates utilize stainless steel transformers and switch enclosures that are designed for storm surge water intrusion prevention.

In addition to the above, costs were included to serve 400 services (based on density type and service wire size) and removal of existing facilities (based on density and line type). The analysis took into account that one transformer or transformer bank could serve more than one customer. For example, one three-phase transformer could serve condominiums with multiple customers. Street lighting costs were also included. All costs were then added together and divided by 5 (miles) to get an average cost per mile.

To determine a representative "typical" system wide average estimated cost per mile, PowerServices combined each of the high and low density construction types for a total of five (5) miles, as reflected on the Construction Cost Estimates Summary. Table A-3 in Appendix A shows the construction and removal costs for each of the above scenarios. Tables A-1 and A-2 summarize the calculation of UG vs. OH construction cost differences.

PowerServices recognizes that some areas may, in fact, be more expensive and other areas less expensive to convert due to factors specific to the area. Therefore, actual conversion costs may vary from those shown in our estimates. Estimated costs are also in 2006 dollars and will need to be adjusted for time and construction duration, and actual project timing. Following is a summary of these estimates.

COSTS AND BENEFITS OF UNDERGROUNDING DISTRIBUTION FACILITIES (CONTINUED)

Average Overhead Underground Differential Per Mile

Average Cost per Mile for Typical Underground Construction	**$ 1,192,172**
Average Cost per Mile for Typical Hardened Overhead Construction	**$ 356,858**
Average Cost Differential	**$ 835,314**

2. <u>O & M Cost Differences</u>

The CIAC credits were calculated by identifying the impacts on the following O&M expense categories that would result if electric facilities are placed underground.

- Outage Restoration Cost Reductions
  1. Non-Major Events (e.g., severe thunderstorms, tornadoes, and unnamed tropical systems)
  2. Major Events (named hurricanes and tropical storms)
- Reduced Operations and Maintenance (O & M) Costs
  1. Vegetation Management
  2. Other Operations and Maintenance Costs
- Reduced Accident Litigation and Awards Payments
- Revenue Losses
  1. Non-Major Events
  2. Major Storm Events

The CIAC credit calculations also include the loss of revenue by FPL for pole attachment fees and increased expenses for costs of underground locates. Table A-4 in Appendix A (reproduced as Table C-1 in Appendix C) shows the total non-site specific adjustments recommended by this report in both dollars per mile and in percentage terms.

a. CIAC Credit for Reduced Storm Outage Restoration Costs

The significant damage caused by hurricanes to exposed poles and various aerial utilities, including electric, telephone, CATV, and other communications infrastructure is well documented throughout the southeastern United States. Many of the areas now being served by underground power lines receive service originating from overhead feeders, and thus they experience outages resulting from overhead feeder outages. Major storms, such as hurricanes, cause damage to overhead lines by impacts from flying debris, storm surge, a combination of wind and rain saturated ground around poles, and direct impact of falling trees. Additionally, the winds not only topple poles, but also break poles and wires. Underground electric lines are sometimes affected by storm surge and flooding, erosion around equipment or covering it with sand and debris, as well as debris either falling on equipment or being carried into it by floodwaters. However, due to the very significant difference in overall exposure to storm factors, underground electric lines are substantially less susceptible to hurricane or major storm damage.

Furthermore, if feeders are placed completely underground back to the substation, overall reliability improves because outages resulting from exposed overhead construction are virtually completely eliminated. The results of less overall damage, combined with accessibility, reduces the number of utility crews required to respond, and reduces the time to restore electric service to most customers, resulting in substantial savings to the utility. In addition, an often-overlooked aspect of restoration costs by utilities is the effect of immediate repairs to restore service and the need to perform subsequent reconstruction of overhead lines. When underground equipment is placed back in service, since it is at ground level, it must be completely restored to a condition safe for the public. In other words, after the storm response, the work is essentially complete. Overhead lines are often placed back in service in a temporary condition with "cleanup" work remaining to be done in the weeks and months following a major storm.

Underground facilities are, on average, far less vulnerable to storm damage than OH facilities. The result of this fact is that storm restoration costs for distribution system outages are substantially less for UG systems than for OH systems, so that UG installations (conversions and new) will provide real benefits to utilities and their general body of customers through reduced storm restoration costs. Thus, this difference in storm/outage restoration costs must be reflected in CIAC calculations. PowerServices calculated appropriate credits for reduced outage restoration costs for non-major storm events and also for named storm events.

1. Non-Major Events (see Appendix C, Table C-2)
   This credit was calculated based on Outage Restoration Costs from 2001-2005. These were provided by FPL in response to Interrogatory No. 15 and Feeder Customer Interruptions responses to Interrogatory No. 52. The average restoration cost per year from 2001-2005 was $95,500,000. The Overhead Customer Interruptions per mile was 86.95, and the Underground Customer Interruptions per mile was 12.03. PowerServices, Inc. used the Customer Interruptions per mile ratio to allocate the restoration costs for underground and overhead. The difference between underground and overhead restoration costs was then used to establish the benefit reduction for restoration costs for every mile of overhead lines converted to underground.

2. Major Events (see Appendix C, Table C-3)
   Calculated based on the same methodology as with non-major events, except instead of using all the categories from the Customer Interruption data to calculate the ratio, only those categories applicable to both underground and overhead (weather, equipment, vegetation) were used to allocate the ratio to apply to hurricane restoration costs.

b. CIAC Credit for Operations and Maintenance Expense

1. Vegetation/Tree Trimming (see Appendix C, Tables C-4 & C-5)
   CIACs should also reflect differences in the life cycle costs for vegetation management and other O & M costs for UG versus OH facilities.

   PowerServices, Inc. calculated the tree trimming CIAC credit using data from PSC Order No. 06-0781-PAA-EI. In response to the Order, FPL stated the annual costs to meet the PSC's three-year trim cycle would be $102,500,000. This would result in a CIAC credit of $74,808 on average for converting overhead lines to underground lines. If the PSC accepts FPL's alternative trim cycle of 3 years for feeders and 6 years for laterals, then the annual tree trimming costs would be $71,900,000. This would result in a CIAC credit of $52,475 for tree trimming. PowerServices used the 3 year cycle for CIAC credit, since that was the PSC's initial recommendation (in Order No. PSC-06-0351-PAA-EI) and FPL had to prove that the three year / six year cycle would be adequate to meet the initiatives set forth by the PSC.

2. Other Operations and Maintenance (see Appendix C, Tables C-6 & C-7)
   PowerServices, Inc. used data from FPL's response to Interrogatory No. 9 and data from other utilities to determine the CIAC credit for other O & M expenses (i.e., O&M

expenses other than those accounted for in storm restoration costs and tree-trimming or vegetation management costs).

Excluding the tree trimming cost from the O & M cost data reported in FPL's response to Interrogatory No. 9 resulted in FPL's reported underground O & M expense being more than the overhead O & M expense per mile. Based on PowerServices experience working with other utilities, this is inconsistent with most utilities. Utilities that PowerServices works with are actually showing lower O & M costs per mile of underground than for overhead O & M per mile. This discrepancy is due partly to improved technology and the current emphasis by FPL to upgrade underground equipment, such as switchgear, that would not be reflected in ongoing expenses.

FPL's 2005 O & M expense differential between underground and overhead, minus tree trimming expenses, would reflect a $11,980 deduction to the CIAC credit (see Table C-6). Utilizing data from other utilities and recognizing that data provided by FPL identified accelerated maintenance for UG equipment that should not continue for the life of the assets, the CIAC credit used in the PowerServices analysis is $9,960 per line-mile (see Table C-7).

c. CIAC Credit for Reduced Accident Litigation Costs, Damage Awards, and Settlement Payments (See Appendix C, Table C-8)

The number of accidents was determined from historical information from the PSC (see Appendix G). FPL has a history of electric system contact fatalities and serious accidents involving the general public and contractor employees. Appendix G is a bar chart of the accident history since 1990. There have been 116 fatalities and 328 accidents from 1990 to June 2006, as reported to the PSC. This large number represents a significant concern and cost that can be meaningfully mitigated by placing overhead lines underground. The value of human life and suffering is nearly immeasurable in real terms; the loss of a mother, father, or child, is sometimes referred to as "damage beyond price."

To help place a value on the significant mitigation of these accidents, the analysis utilized representative historical settlement and damage awards in electrical accident cases as a benchmark. Appendix H contains a summary of the cases considered in developing the costs associated with both litigation and awards paid out to the injured parties. Since most cases are settled and contain confidentiality agreements, no specifics are provided. Our experience has shown that injury cases typically result in higher awards and settlements than deaths due primarily to the ongoing health care issues and expenses. Furthermore, the awards and settlement amounts have been rapidly increasing over recent years. We believe our analysis is conservative and excludes any value associated with the human factors element of saving lives and injuries.

Our resulting analysis detailed in Appendix C is $87,109.00 per mile of overhead line converted to underground.

The direct economic benefits of the accident mitigation flows to FPL and its joint use partners. The joint use agreements often require the parties to share, sometimes up to 50%, in the cost of awards associated with accidents. Even more importantly, the public, the communities, and the state will benefit from the mitigation of the loss of life and the suffering, including ongoing health care costs, worker compensation costs, and many other intangible costs.

d. <u>CIAC Credits for Reduced Revenue Losses</u>

Customer outages will be reduced by UG installations, whether conversions or new. It is obvious that, as electric service is maintained to customers served by UG systems, their "meters will keep spinning" and the utility will realize additional base revenues that it would not realize if the customers are unable to receive electric service due to outages on the distribution system. In the short run, these additional base revenues will accrue to the utility's bottom line returns, and in the long run, greater sales will result in lower rates for any given level of authorized base revenue requirement and, if the utility is operating under a revenue sharing plan, the increased revenues may result in refunds to customers. Thus, it is appropriate to credit CIACs for such reductions in revenue losses.

1. Non-Major Events (see Appendix C, Table C-9)
   Calculated based on data provided by FPL Interrogatory No. 15, FPL response to Interrogatory No. 52, and FPL 2005 FERC Form 1. The revenue loss from non-major events was calculated as shown in Table C-9 of Appendix C.

2. Major Events (see Appendix C, Table C-10)
   Calculated based on data provided by FPL, as shown. The methodology is shown in Table C-10.

3. Identifiable and Quantifiable Site-Specific or Project-Specific Benefits

Identifiable and quantifiable project-specific benefits from undergrounding can include: cost savings realized by not otherwise having to remove and replace facilities to remedy NESC clearance violations; additional cost savings realized from an OH-to-UG conversion project where the project eliminates complicated overhead routing problems; and elimination of the additional costs associated with accessing difficult-to-access overhead lines for replacement or maintenance. For example, if a section of utility line does not meet the requirements of the National Electrical Safety Code (NESC) or other regulatory requirements, then the utility should receive no consideration for remaining life of the overhead lines when calculating the base cost differential in underground versus overhead, nor for the cost of removing such facilities. This is because the facilities, being in violation of the NESC, would have to be removed and replaced anyway. In addition, if it is determined that overhead lines cannot be reasonably rebuilt in place because of development, vegetation problems, or other issues that have evolved since the initial installation, and underground is the best reasonable option, the cost difference between underground and overhead – and thus any CIAC - should be zero.

These benefits are not typical, and PowerServices therefore did not include any value for them in its calculation of appropriate CIAC credits for "typical" or general UG conversion projects. However, where they exist, they should be factored into the CIAC calculation for the particular project.

4. <u>Calculation of CIACs</u>

For a specific UG conversion project (or a specific new UG installation), the cost information described above can be used to calculate the CIAC that should be paid by the applicant for UG service in order to properly apportion the costs of the UG job fairly. Starting with the difference in UG minus OH construction costs, the various net benefits (and net additional costs, e.g., lost pole attachment revenue) from undergrounding are deducted. This will include not only the general benefits applicable to all UG projects, but also any site-specific benefits (or costs). These are illustrated for FPL (although no values are included for site specific benefits) data in Table C-1. The estimated installed cost for representative UG construction (conversion application, including the costs to remove existing OH facilities) is $1,192,172 per mile. Subtracting the cost of "equivalent" hardened OH facilities from this amount produces the initial construction cost differential: $835,314. (The calculations of the initial construction costs and this differential are shown in Table A-1 of

Appendix A.) Then, the benefits (O&M cost savings and reduced revenue losses) of UG are subtracted, and the additional costs of UG are added to this value. This yields the approximate CIAC for a "typical" UG conversion project, i.e., a project where there no site-specific or project-specific conditions and cost impacts that warrant further adjustments. As shown in Table A-4 (and Table C-1), PowerServices estimates that this credit would be approximately $422,158 per mile, or approximately 50.54% of the installed cost differential.

If any part of a utility's existing OH system would have to be replaced anyway due to NESC code violations or other conditions requiring the OH facilities to either be moved or replaced, then the removal costs associated with those facilities should be set to zero, as should any allowance for the net book value of the facilities to be removed. If only UG facilities would solve the problem, then the CIAC for that portion of the system to be converted would be set to zero.

Net Present Value Considerations

The CIAC adjustment calculations have been analyzed on the basis of the benefits (and costs) of undergrounding on an average system mile. The annual benefit is then evaluated for the present value over 30 years. This has been done in two ways. One method is simplistic and conservative, which assumes the annual increase in benefits due to inflation (escalation in benefits) in the specific electric utility sectors equals the present worth factor (discount rate). The other method is to assume an annual escalation rate for each benefit, then evaluate that for thirty years and calculate the present worth for each year based on an appropriate discount rate. Both methods require the use of historical and forward trends to predict annual escalation of each benefit. Also, each method must be premised on a given discount rate.

Appendix I contains Producer Price Indices ("PPI") curves for components that affect electric utility construction operation and maintenance and other costs. The electric utility industry has encountered more rapid escalation in O & M and construction than the general economy as a whole for numerous factors. These include:

1. Rapidly rising cost of distillate fuels.
2. Rapidly rising cost of raw materials, such as metals and metal products.
3. A decline in available construction personnel in the electric utility field (trained line personnel).
4. An increase in the need to use contractors for utility activities, including construction and O & M.
5. A decline in available engineers and other technically educated and trained personnel for the electric utility industry. As an example, electrical engineers are taking the higher paying jobs in the software and computer industry, among other industries.

Our experience has indicated cost escalation far in excess of discount rates and interest rates over the past four to five years. Annual increases of 20% to 30% per year in some sectors has been common. The forward trend associated with the electric utility industry is expected to continue at a rate in excess of interest rates and discount rates. This means that the simplistic approach, in which the calculated or estimated annual cost adjustment factor is multiplied by 30 years to arrive at a 30 year present value is, in fact, conservative. As discussed above, this simplistic approach produces total cost adjustments of $422,158.00 per mile, and is shown in Table C-1 in Appendix C. The detailed, cost-factor-specific present value methodology is shown in Appendix I (Table I-8). This methodology embodies specific escalation rates for each cost component, and each cost component is present-valued using FPL's current discount rate (8.37%). This approach indicates that the appropriate CIAC credit would be $429,387.00 per mile.

B. Qualitative and Non-Quantifiable Benefits of Undergrounding

As used in this report, the term "qualitative benefits" means real, tangible benefits realized from UG conversions that are not directly captured or reflected in the costs borne, or in the benefits realized by, the utility and its general body of customers. These qualitative benefits include the following.

1. Improved Health and Safety In Storms. The general public health and safety are significantly enhanced by UG facilities during and after storms due to fewer power outages and more rapid power restoration. Emergency management personnel recognize the level of an emergency is substantially reduced when utilities, particularly power, are restored quickly or never interrupted. These benefits may include: maintaining service to critical care facilities and health care equipment, traffic control devices, fire suppression systems, public area lighting (especially important for nighttime restoration efforts), and other utilities, such as water, wastewater, and telecommunications services; reduced perishable food and other product losses; enhanced security and protection from crime and looting; and enhanced public perception of safety and security.

2. Life, Personal, and Property Safety. Continuity of electric service can be critical not only to the health and safety of the general population, as described above in terms of maintaining critical infrastructure, it can also be critical to individuals who require home health equipment that operates on electricity. Additionally, personal and property safety, even around the house or at the workplace, are obviously enhanced by having lighting and other electrically-powered equipment facilities working properly.

3. Aesthetics. Underground utility facilities, including not only electric, but also telephone and cable television lines, generally add to the aesthetic quality of homes and neighborhoods, and this in turn reflects in enhanced property values.

4. Reliability. In addition to the already calculated benefits reflected in direct utility cost savings, UG conversions will provide additional reliability benefits to electric customers in the form of reduced and avoided losses and inconvenience due to outages.

5. Enhanced Economic Development and Reduced Economic Disruptions Due to Storms. It is obvious that commercial and industrial businesses will have a greater opportunity to maintain operations following storm events if electricity is available. In some instances, of course, these benefits will be offset by transportation obstructions such as debris and downed trees blocking roads, but these are generally removed more quickly than OH power lines are restored and when people can get to work, they can work if their employers' electricity is on. Thus, undergrounding can reasonably be expected to reduce economic disruptions due to storms. Similarly, for the same basic reasons, the availability of underground utilities can be a significant selling point for businesses making location decisions.

6. Environmental Benefits. Although closely related to aesthetics, UG facilities will generally permit greater tree cover and will generally involve less intrusion onto surface plants and habitats than overhead facilities. These environmental values can be particularly meaningful for the many Florida communities that prize their environmental amenities.

7. General Community Enhancement. Property values, both for individual residences, individual commercial buildings, and for general communities at large, are also enhanced by the greater reliability of underground utilities.

C. Overview of Other Representative Hurricane Experience With UG versus OH Lines

Subsequent to PowerServices' site visit with BEMC regarding their major undergrounding program, follow-up data was obtained from BEMC personnel as follows:

- The east end of Oak Island (North Carolina), which had been placed underground, maintained power during Hurricane Floyd in 1999 despite some facilities being completely submerged. This area also performed well during Hurricanes Bertha (1996), Fran (1996), and Bonnie (1998). All were direct strikes.
- Portions of Oak Island served by overhead electric lines when the abovementioned storms hit had significant outages due to wind blown debris causing lines to break, poles to lean, and facilities to become entangled with vegetation.
- Oak Island was predominantly an overhead electric system prior to the FEMA funded project, which was completed between 2001 and 2004.

- Oak Island and the adjacent islands of Ocean Isle, Holden Beach, and Sunset Beach have been hit by storms since the undergrounding project, and have all experienced reduced outages and restoration time.
- During Tropical Storm Ernesto (2006), Oak Island experienced no outages due to its new underground facilities. BEMC experienced 4000 outages, all on inland overhead portions of their system.
- BEMC personnel have indicated a reduced number of crews needed for maintenance of underground areas, as well as for storm restoration.
- According to Mr. Lewis Shaw, BEMC's Manager of Engineering, "To this point we have not experienced any real negatives from the underground conversion philosophy. I think it is safe to say that we all agree it was the right direction to take."
- Mr. Shaw also praises the benefits of underground electric utilities on their barrier island service territory during BEMC's most recent storm experience. He quotes: "As far as Ernesto goes, we probably had as many as 4,000 consumers out, all of which were associated with sections of our overhead system. To my knowledge we didn't have any problems on any of the islands, nothing major anyway. If we did, it would have just been an isolated service here or there, but I don't recall any. The overhead portions that I recall really pertained to either trees or limbs that were blown over into or onto the line. But our underground fared extremely well. I don't recall very many operations on any of those circuits. So underground in that situation paid off. We ended up working about 48 hours, with the bulk of it cleaned up 12 hours after the storm, then had some loose ends to take care of. It was not a major blow, but was heavy enough for us to know that underground paid off in that storm."

North Carolina has also experienced an increased number of hurricane strikes since 1996, including Bertha (1996), Fran (1996), Bonnie (1998), Floyd (1999), Isabel (2003), Alex (2004), Charley (2004), as well as other less powerful tropical storms and hurricanes. Examples of how OH and UG utilities have fared in various conditions are documented throughout the state. Hurricane Fran pummeled North Carolina in 1996.

The outage situations in Wake County, North Carolina are an excellent example of the benefits of underground distribution systems. Many parts of Wake County were without power for a week or more, while sections such as the MacGregor Downs area of Cary, North Carolina in southern Wake County did not lose power because they were served by all underground distribution utilities with a secure wide right-of-way 230 kV transmission line feeding the substation that served the MacGregor Downs distribution system. The high winds and preceding rains resulted in massive tree damage and associated downed power lines. Wake County is substantially inland from the coast, yet the benefits of underground power lines were significant.

D. Economic Benefits to the Florida Economy and the General Public - Expected Unserved Energy Analysis

As discussed above, many additional benefits accrue to the general public and to the economy at large where electric service is maintained, especially where service is maintained in post-storm conditions. The benefits identified above include: maintaining service to critical care facilities and health care equipment, traffic control devices, fire suppression systems, public area lighting (especially important for nighttime restoration efforts), and other utilities, such as water, wastewater, and telecommunications services; reduced perishable food and other product losses; enhanced security and protection from crime and looting; and enhanced public perception of safety and security.

Additionally, individuals and businesses realize significant benefits from having electric service maintained, and these benefits have value that is much greater than the price of electricity. Some benefits include avoidance of lost perishable food, enhanced safety and comfort, being able to stay in their homes, being able to go to work (in the case of individuals), and being able to keep commercial and industrial facilities in operation (in the case of businesses). A recognized electric system reliability technique or methodology, known as Expected Unserved Energy ("EUE") analysis, is used to estimate how much of customers' demand for electricity can be served with a given improvement to the electric system, e.g., a new generation plant, a new transmission line, or here, additional underground distribution facilities, as compared to the system without the improvement being considered. This methodology can also be and is used to incorporate the value of the electricity to customers. See Appendix J for a bibliography of selected articles and reports in which the EUE technique is used.

In the context of undergrounding distribution facilities, EUE analysis can be applied to measure the amount of electricity (kilowatt-hours or megawatt-hours) that can be served during and following storms with undergrounded facilities as opposed to the amount served with overhead facilities only. The analysis begins by looking at the sales not made due to storms, and then estimating the amount of sales that could reasonably be expected to be made if facilities were underground. This amount naturally must estimate the difference between sales with UG facilities in place and sales with OH facilities in place, not simply the total sales not made in storm events. The analysis then proceeds to assign a value to the differential kWh or MWH not served to arrive at an estimate of the value of undergrounding.

In Florida, reasonable estimates of energy sales not made by FPL in 2004 and 2005 are available from, or derivable from, information furnished by FPL in its storm cost recovery proceedings. FPL's value for 2005 storms was approximately 1.56 billion kWh not served. Assuming conservatively that a net of 90 percent of those kWh would have been served if FPL's entire distribution system were underground (it is presently approximately 37 percent underground), indicates that FPL would likely have sold about 1.38 billion more kWh in 2005. Extrapolating this to 2004 and 2005 based on known customer outage and duration values indicates that something on the order of 2.8 billion kWh could have been served by FPL from an all-UG system. Making a further conservative extrapolation of this figure to the entire state (excluding the 10 percent of the state that is served by rural electric cooperatives, in view of their relatively lower population densities), at 1.5 times the FPL value, the amount of electricity sales that could have been made with UG distribution systems would be on the order of 4.2 billion kWh over the same period.[1]

Applying a value of $10 per kWh not served, which is well within the range of values reported in the utility literature, indicates a total value that could have been realized from undergrounding over this 2-year period of $42 billion. Even at a more conservative value of $5 per kWh, the total value that could have been realized would be about $21 billion. Obviously, at

[1] Since FPL's sales represent close to half of the non-coop sales for Florida, it would be tempting to simply double the FPL figure, but the 1.5 times value was, as stated above, chosen to be conservative.

greater values for unserved energy[2], benefits would be correspondingly greater. The actual value that persons assign to not being blacked out can be argued by economists and others, but the point is that there is real value to the general public and to the Florida economy at large from maintaining electric service that is not captured in utility accounts, and as stewards of the public interest, both utilities and the Public Service Commission should consider this value in making their policies regarding undergrounding.

[2] Two EPRI studies cited in Appendix J used values of $24/kWh and $100/kWh, respectively, and a PacifiCorp presentation cited to an EPRI study with EUE values between $5/kWh and $44/kWh.

COST-EFFECTIVENESS OF UNDERGROUNDING ELECTRIC DISTRIBUTION FACILITIES IN FLORIDA

CONCLUSION

Although undergrounding has been advocated and studied periodically for nearly 20 years in Florida, it was the unprecedented hurricane seasons of 2004 and 2005 that brought many Floridians and Florida utilities around to appreciating the substantial and significant value that undergrounding distribution facilities provides in terms of electric reliability, cost savings, and community benefits. The Florida Public Service Commission is moving forward with rulemaking proceedings to enhance electric distribution reliability, including considering means of encouraging undergrounding. These efforts have necessarily included further analysis and consideration aimed at encouraging the maximum amount of cost-effective underground installations, both new and conversions. In order to achieve this goal, the utilities' computations of Contributions in Aid of Construction must recognize at least all direct utility costs and benefits.

This report identifies and quantifies those direct utility costs and benefits – where the benefits of undergrounding are primarily the savings of storm restoration costs, tree-trimming costs, reduced revenue losses, and other costs that would be incurred on the utilities' overhead distribution systems. The report proceeds to estimate an appropriate percentage reduction of the otherwise-applicable CIACs to reflect these benefits.

The analyses performed by PowerServices and reported here indicate that, for typical OH to UG conversion projects, a credit of approximately 50% of the difference between UG construction costs and hardened OH construction costs should be applied in computing CIACs. This report and its analysis recommend this

CONCLUSION
(CONTINUED)

CIAC adjustment percentage, as applicable to all overhead to underground conversion projects, as a minimum:

OVERHEAD to UNDERGROUND CONVERSION CIAC CALCULATION
(Costs and adjustments on a per mile of conversion basis)

Base Conversion Cost Differential			$835,314.00
Conversion Benefit Adjustments to CIAC		**Fixed Percentage Adjustments (%)**	**Fixed Cost Adjustments (dollars)**
Outage Restoration Reduction	- Non-major events	5.60%	$46,775.42
	- Major Events	23.68%	$197,791.32
Reduced Revenue Losses	- Non-major events	0.13%	$1,109.25
	- Major events	2.45%	$20,443.99
Reduced O&M Costs	- Vegetation Management	8.96%	$74,808.42
	- Other O&M**	1.19%	$9,960.00
Cost of UG Locates		-0.78%	($6,540.00)
Loss of Pole Attachment Revenue		-1.11%	($9,300.00)
Reduced Accident Litigation & Award Payments		10.43%	$87,109.28
Non-Participant Benefit (Qualitative Others)		-	-
Elimination of NESC (Code) Violations		-	-
Elimination of Overhead Routing Problems		-	-
Fixed Adjustments		50.54%	$422,157.68

** Other O&M From FPL Data Responses Reflects Higher O&M for Underground / Mile
PowerServices Inc. Estimates Reflect Improved O&M Cost for Underground Based on Improved Technology and other utility experience

CONCLUSION (CONTINUED)

In addition, this report indicates that project-specific conditions may warrant additional credits. For example, where NESC clearance violations can only be remedied by substantial relocations of OH facilities or by undergrounding, it may be that either a substantially lower CIAC or no CIAC at all should be paid for such conversion projects.

APPENDIX A

SUMMARY OF CONSTRUCTION COST ESTIMATES AND CIAC CALCULATIONS

Table A - 1

PowerServices, Inc.

Construction Cost Estimate: Overhead / Underground Average Cost Differential per Mile

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	

Description: Typical Underground Contstruction				
1 Mile(s) Three Phase High Density	@	$1,259,691.03		$1,259,691.03
1 Mile(s) Three Phase High Density 1/0	@	$1,027,488.69		$1,027,488.69
1 Mile(s) Three Phase Low Density	@	$892,548.24		$892,548.24
1 Mile(s) One Phase High Density	@	$370,352.19		$370,352.19
1 Mile(s) One Phase Low Density	@	$332,236.07		$332,236.07
			5 Miles - Subtotal	**$3,882,316.22**
310 Customers One Phase 4/0 TPX	@	$2,410.05		$747,116.00
60 Customers Three Phase 4/0 QUAD	@	$2,628.70		$157,722.05
30 Customers One Phase 350 TPX	@	$2,698.67		$80,960.22
			400 Customers - Subtotal	**$985,798.26**
Street Lights	@	$185,967.76	**Subtotal**	**$743,871.04**
2 Miles Three Phase High Density Removal	@	$103,269.80		$206,539.61
1 Miles Three Phase Low Density Removal	@	$57,734.03		$57,734.03
1 Miles One Phase High Density Removal	@	$46,171.40		$46,171.40
1 Miles One Phase Low Density Removal	@	$38,430.70		$38,430.70
			5 Miles Removals - Subtotal	**$348,875.74**
			5 Miles - Total	**$5,960,861.26**
			Divided by	5
			Average Cost per Mile for Typical Underground Construction	**$1,192,172.25**

Description: Typical Overhead Contstruction				
1 Mile(s) Three Phase High Density	@	$284,638.43		$284,638.43
1 Mile(s) Three Phase High Density 1/0	@	$224,137.12		$224,137.12
1 Mile(s) Three Phase Low Density	@	$155,707.69		$155,707.69
1 Mile(s) One Phase High Density	@	$107,243.41		$107,243.41
1 Mile(s) One Phase Low Density	@	$93,544.76		$93,544.76
			5 Miles - Subtotal	**$865,271.40**
200 Customers One Phase 2/0 TPX	@	$795.80		$159,159.70
140 Customers One Phase 4/0 TPX	@	$940.25		$131,634.46
30 Customers Three Phase 4/0 QUAD	@	$1,129.13		$33,873.99
30 Customers Three Phase 350 QUAD	@	$1,569.92		$47,097.69
			400 Customers - Subtotal	**$371,765.84**
Street Lights	@	$49,595.04	**Subtotal**	**$198,380.16**
2 Miles Three Phase High Density Removal	@	$103,269.80		$206,539.61
1 Miles Three Phase Low Density Removal	@	$57,734.03		$57,734.03
1 Miles One Phase High Density Removal	@	$46,171.40		$46,171.40
1 Miles One Phase Low Density Removal	@	$38,430.70		$38,430.70
			5 Miles Removals - Subtotal	**$348,875.74**
			5 Miles - Total	**$1,784,293.14**
			Divided by	5
			Average Cost per Mile for Typical OverHead Construction	**$356,858.63**

Average Cost Differential per Mile	**$835,313.62**

Table A - 2

Average Construction Cost Differential per Mile

Average Cost per Mile for Typical Underground Construction	$1,192,172
Average Cost per Mile for Typical Overhead Construction	$356,858
Average Cost Differential	$835,314

Table A - 3

PowerServices, Inc.

Average Construction Cost Per Mile

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description: Summary			

Page	Projects	Project Cost
1.	3 Phase High Density Underground - Main Feeder - One Mile	$1,259,691.03
2.	3 Phase High Density Underground 1/0 ACSR - Local Feeder - One Mile	$1,027,488.69
3.	3 Phase Low Density Underground 1/0 ACSR - Local Feeder - One Mile	$892,548.24
4.	1 Phase High Density Underground 1/0 ACSR - Local Feeder - One Mile	$370,352.19
5.	1 Phase Low Density Underground 1/0 ACSR - Local Feeder - One Mile	$332,236.07
6.	3 Phase High Density Overhead - Main Feeder - One Mile	$284,638.43
7.	3 Phase High Density Overhead 1/0 ACSR - Local Feeder - One Mile	$224,137.12
8.	3 Phase Low Density Overhead 1/0 ACSR - Local Feeder - One Mile	$155,707.69
9.	1 Phase High Density Overhead 1/0 ACSR - Local Feeder - One Mile	$107,243.41
10.	1 Phase Low Density Overhead 1/0 ACSR - Local Feeder - One Mile	$93,544.76
11.	3 Phase High Density Removals - One Mile	$103,269.80
12.	3 Phase Low Density Removals - One Mile	$57,734.03
13.	1 Phase High Density Removals - One Mile	$46,171.40
14.	1 Phase Low Density Removals - One Mile	$38,430.70
15.	High Density Street Lights Underground Feed - One Mile	$185,967.76
16.	High Density Street Lights Overhead Feed - One Mile	$49,595.04
17.	Underground Services 4/0 TPX - Per Service	$2,410.05
18.	Underground Services 4/0 QUAD - Per Service	$2,628.70
19.	Underground Services 350 TPX - Per Service	$2,698.67
20.	Overhead Services 2/0 TPX - Per Service	$795.80
21.	Overhead Services 4/0 TPX - Per Service	$940.25
22.	Overhead Services 4/0 QUAD - Per Service	$1,129.13
23.	Overhead Services 350 QUAD - Per Service	$1,569.92

Table A - 4

OVERHEAD to UNDERGROUND CONVERSION ADJUSTMENTS to CIAC
(Costs and adjustments on a per mile of conversion basis)

Conversion Benefit Adjustments to CIAC		Fixed Percentage Adjustments (%)	Fixed Cost Adjustments (dollars)
Base Conversion Cost Differential			$835,314.00
Outage Restoration Reduction	- Non-major events	5.60%	$46,775.42
	- Major Events	23.68%	$197,791.32
Reduced Revenue Losses	- Non-major events	0.13%	$1,109.25
	- Major events	2.45%	$20,443.99
Reduced O&M Costs	- Vegetation Management	8.96%	$74,808.42
	- Other O&M**	1.19%	$9,960.00
Cost of UG Locates		-0.78%	($6,540.00)
Loss of Pole Attachment Revenue		-1.11%	($9,300.00)
Reduced Accident Litigation & Award Payments		10.43%	$87,109.28
Non-Participant Benefit (Qualitative Others)		-	-
Elimination of NESC (Code) Violations		-	-
Elimination of Overhead Routing Problems		-	-
Fixed Adjustments		50.54%	$422,157.68

** Other O&M From FPL Data Responses Reflects Higher O&M for Underground / Mile
PowerServices Inc. Estimates Reflect Improved O&M Cost for Underground Based on Improved Technology and other utility experience

Power Services
Management Services For Utilities

APPENDIX B

UNDERGROUND AND HARDENED OVERHEAD SYSTEM COST ESTIMATES

Table B - 1

PowerServices, Inc.

Construction Cost Estimate: 3 Phase High Density Overhead - Main Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**3 Phase High Density Overhead - Main Feeder - One Mile**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50/1 Pole	36	Each	$798.00	$540.00	$1,338.00	$48,168.00
2.	C1	28	Each	$322.80	$278.40	$601.20	$16,833.60
3.	C2-1	4	Each	$352.80	$325.20	$678.00	$2,712.00
4.	C7	4	Each	$375.60	$350.40	$726.00	$2,904.00
5.	E1-2	20	Each	$69.60	$63.60	$133.20	$2,664.00
6.	F1-3S	20	Each	$163.20	$30.00	$193.20	$3,864.00
7.	G136-10	10	Each	$477.00	$579.60	$1,056.60	$10,566.00
8.	G312-37.5	15	Each	$1,774.00	$2,400.00	$4,174.00	$62,610.00
9.	556.5 ACSR	10.8	k Feet	$1,600.00	$1,600.00	$3,200.00	$34,560.00
10.	336.4 ACSR	4	k Feet	$1,020.00	$600.00	$1,620.00	$6,480.00
11.	1/0 ACSR	8.5	k Feet	$897.60	$240.00	$1,137.60	$9,669.60
12.	M2-11	35	Each	$84.00	$60.00	$144.00	$5,040.00
13.	M5-6	12	Each	$97.00	$47.00	$144.00	$1,728.00
14.	3 Ph COLA BKT	4	Each	$120.00	$100.00	$220.00	$880.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						Subtotal - Construction w/o Contingencies	$208,679.20
			10%			Contingencies	$20,867.92
						Subtotal	$229,547.12
			24%			Engineering, General and Administrative	$55,091.31
						Project Total	$284,638.43

Table B - 2

PowerServices, Inc.

Construction Cost Estimate: 3 Phase High Density Overhead 1/0 ACSR - Local Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description: 3 Phase High Density Overhead 1/0 ACSR - Local Feeder - One Mile			

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50/1 Pole	36	Each	$798.00	$540.00	$1,338.00	$48,168.00
2.	C1	28	Each	$322.80	$278.40	$601.20	$16,833.60
3.	C2-1	4	Each	$352.80	$325.20	$678.00	$2,712.00
4.	C7	4	Each	$375.60	$350.40	$726.00	$2,904.00
5.	E1-2	20	Each	$69.60	$63.60	$133.20	$2,664.00
6.	F1-3S	20	Each	$163.20	$30.00	$193.20	$3,864.00
7.	G136-10	15	Each	$477.00	$579.60	$1,056.60	$15,849.00
8.	G312-37.5	10	Each	$1,774.00	$2,400.00	$4,174.00	$41,740.00
9.	1/0 ACSR	18	k Feet	$897.60	$240.00	$1,137.60	$20,476.80
10.	M2-11	36	Each	$84.00	$60.00	$144.00	$5,184.00
11.	M5-6	12	Each	$97.00	$47.00	$144.00	$1,728.00
12.	3 Ph COLA BKT	10	Each	$120.00	$100.00	$220.00	$2,200.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
				Subtotal - Construction w/o Contingencies			$164,323.40
			10%	Contingencies			$16,432.34
				Subtotal			$180,755.74
			24%	Engineering, General and Administrative			$43,381.38
				Project Total			$224,137.12

Table B - 3

PowerServices, Inc.

Construction Cost Estimate: 3 Phase Low Density Overhead 1/0 ACSR - Local Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**3 Phase Low Density Overhead 1/0 ACSR - Local Feeder - One Mile**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50/1 Pole	25	Each	$798.00	$540.00	$1,338.00	$33,450.00
2.	C1	17	Each	$322.80	$278.40	$601.20	$10,220.40
3.	C2-1	4	Each	$352.80	$325.20	$678.00	$2,712.00
4.	C7	4	Each	$375.60	$350.40	$726.00	$2,904.00
5.	E1-2	20	Each	$69.60	$63.60	$133.20	$2,664.00
6.	F1-3S	20	Each	$163.20	$30.00	$193.20	$3,864.00
7.	G136-10	10	Each	$477.00	$579.60	$1,056.60	$10,566.00
8.	G312-37.5	5	Each	$1,774.00	$2,400.00	$4,174.00	$20,870.00
9.	1/0 ACSR	18	k Feet	$897.60	$240.00	$1,137.60	$20,476.80
10.	M2-11	25	Each	$84.00	$60.00	$144.00	$3,600.00
11.	M5-6	12	Each	$97.00	$47.00	$144.00	$1,728.00
12.	3 Ph COLA BKT	5	Each	$120.00	$100.00	$220.00	$1,100.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
				Subtotal - Construction w/o Contingencies			$114,155.20
			10%	Contingencies			$11,415.52
				Subtotal			$125,570.72
			24%	Engineering, General and Administrative			$30,136.97
				Project Total			$155,707.69

Table B - 4

PowerServices, Inc.

Construction Cost Estimate: 1 Phase High Density Overhead 1/0 ACSR - Local Feeder

Owner:		Date:	11/3/06 3:00 PM
Facility:		Est. By:	DSH HGB
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		Project No.:	
Description:	1 Phase High Density Overhead 1/0 ACSR - Local Feeder - One Mile		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50/1 Pole	36	Each	$798.00	$450.00	$1,248.00	$44,928.00
2.	A1	29	Each	$40.00	$25.00	$65.00	$1,885.00
3.	A2-1	4	Each	$40.00	$40.00	$80.00	$320.00
4.	A-4	1	Each	$50.00	$50.00	$100.00	$100.00
5.	A-5	2	Each	$25.00	$25.00	$50.00	$100.00
6.	E1-2	16	Each	$69.60	$63.60	$133.20	$2,131.20
7.	F1-3S	4	Each	$163.20	$30.00	$193.20	$772.80
8.	G-105-25	18	Each	$477.00		$477.00	$8,586.00
9.	1/0 ACSR	12	k Feet	$897.60	$240.00	$1,137.60	$13,651.20
10.	M2-11	35	Each	$84.00	$60.00	$144.00	$5,040.00
11.	M5-9LB	3	Each	$76.00	$114.00	$190.00	$570.00
12.	M5-6	4	Each	$98.00	$37.00	$135.00	$540.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00

	Subtotal - Construction w/o Contingencies	$78,624.20
10%	Contingencies	$7,862.42
	Subtotal	$86,486.62
24%	Engineering, General and Administrative	$20,756.79
	Project Total	$107,243.41

Table B - 5

PowerServices, Inc.

Construction Cost Estimate: 1 Phase Low Density Overhead 1/0 ACSR - Local Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**1 Phase Low Density Overhead 1/0 ACSR - Local Feeder - One Mile**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50/1 Pole	25	Each	$798.00	$450.00	$1,248.00	$31,200.00
2.	A1	14	Each	$40.00	$25.00	$65.00	$910.00
3.	A2-1	4	Each	$40.00	$40.00	$80.00	$320.00
4.	A-4	1	Each	$50.00	$50.00	$100.00	$100.00
5.	A-5	4	Each	$25.00	$25.00	$50.00	$200.00
6.	E1-2	16	Each	$69.60	$63.60	$133.20	$2,131.20
7.	F1-3S	4	Each	$163.20	$30.00	$193.20	$772.80
8.	G-105-25	15	Each	$400.00	$582.00	$982.00	$14,730.00
9.	1/0 ACSR	12	k Feet	$897.60	$240.00	$1,137.60	$13,651.20
10.	M2-11	24	Each	$84.00	$60.00	$144.00	$3,456.00
11.	M5-9LB	3	Each	$76.00	$114.00	$190.00	$570.00
12.	M5-6	4	Each	$98.00	$37.00	$135.00	$540.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
				Subtotal - Construction w/o Contingencies			$68,581.20
			10%	Contingencies			$6,858.12
				Subtotal			$75,439.32
			24%	Engineering, General and Administrative			$18,105.44
				Project Total			$93,544.76

Table B - 6

PowerServices, Inc.

Construction Cost Estimate: 3 Phase High Density Removals

Owner:	Date: 11/3/06 3:00 PM
Facility:	Est. By: DSH HGB
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida	Project No.:
Description: 3 Phase High Density Removals - One Mile	

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50' Pole	36	Each	$360.00		$360.00	$12,960.00
2.	C1	28	Each	$246.00		$246.00	$6,888.00
3.	C2-1	4	Each	$360.00		$360.00	$1,440.00
4.	C-7	4	Each	$264.00		$264.00	$1,056.00
5.	E1-2	10	Each	$84.00		$84.00	$840.00
6.	F1-3S	10	Each	$120.00		$120.00	$1,200.00
7.	556 AAC	10.8	k Feet	$800.00		$800.00	$8,640.00
8.	1/0 AAC	6	k Feet	$400.00		$400.00	$2,400.00
9.	336.4 AAC	4	k Feet	$500.00		$500.00	$2,000.00
10.	M5-6	12	Each	$50.00		$50.00	$600.00
11.	3 Ph COLA BKT	20	Each	$50.00		$50.00	$1,000.00
12.	G136-10	5	Each	$246.40		$246.40	$1,232.00
13.	G312-37.5	20	Each	$1,638.00		$1,638.00	$32,760.00
14.	M26-5L	35	Each	$77.00		$77.00	$2,695.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
			Subtotal - Construction w/o Contingencies				$75,711.00
			10%			Contingencies	$7,571.10
						Subtotal	$83,282.10
			24%	Engineering, General and Administrative			$19,987.70
						Project Total	$103,269.80

Table B - 7

PowerServices, Inc.

Construction Cost Estimate: 3 Phase Low Density Removals

Owner:		Date:	11/3/06 3:00 PM
Facility:		Est. By:	DSH HGB
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		Project No.:	
Description:	3 Phase Low Density Removals - One Mile		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50' Pole	29	Each	$360.00		$360.00	$10,440.00
2.	C1	17	Each	$246.00		$246.00	$4,182.00
3.	C2-1	4	Each	$360.00		$360.00	$1,440.00
4.	C-7	4	Each	$264.00		$264.00	$1,056.00
5.	E1-2	20	Each	$84.00		$84.00	$1,680.00
6.	F1-3S	20	Each	$120.00		$120.00	$2,400.00
7.	1/0 AAC	18	k Feet	$400.00		$400.00	$7,200.00
8.	M5-6	12	Each	$50.00		$50.00	$600.00
9.	3 Ph COLA BKT	5	Each	$50.00		$50.00	$250.00
10.	G136-10	10	Each	$246.40		$246.40	$2,464.00
11.	G312-37.5	5	Each	$1,638.00		$1,638.00	$8,190.00
12.	M26-5L	25	Each	$77.00		$77.00	$1,925.00
13.	M2-11	25	Each	$20.00		$20.00	$500.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
			Subtotal - Construction w/o Contingencies				$42,327.00
			10%			Contingencies	$4,232.70
						Subtotal	$46,559.70
			24%			Engineering, General and Administrative	$11,174.33
						Project Total	$57,734.03

Table B - 8

PowerServices, Inc.

Construction Cost Estimate: 1 Phase High Density Removals

Owner:		Date:	11/3/06 3:00 PM
Facility:		Est. By:	DSH HGB
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		Project No.:	
Description:	1 Phase High Density Removals - One Mile		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50' Pole	35	Each	$360.00		$360.00	$12,600.00
2.	A1	29	Each	$25.00		$25.00	$725.00
3.	A2-1	4	Each	$25.00		$25.00	$100.00
4.	A5	2	Each	$50.00		$50.00	$100.00
5.	E1-2	16	Each	$84.00		$84.00	$1,344.00
6.	F1-3S	4	Each	$120.00		$120.00	$480.00
7.	G105-25	18	Each	$360.00		$360.00	$6,480.00
8.	1/0 ACSR	12	k Feet	$748.00		$748.00	$8,976.00
9.	M5-9LB	3	Each	$50.00		$50.00	$150.00
10.	M5-6	4	Each	$50.00		$50.00	$200.00
11.	M26-5L	35	Each	$77.00		$77.00	$2,695.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00

	Subtotal - Construction w/o Contingencies	$33,850.00
10%	Contingencies	$3,385.00
	Subtotal	$37,235.00
24%	Engineering, General and Administrative	$8,936.40
	Project Total	$46,171.40

Table B - 9

PowerServices, Inc.

Construction Cost Estimate: 1 Phase Low Density Removals

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**1 Phase Low Density Removals - One Mile**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	50' Pole	25	Each	$360.00		$360.00	$9,000.00
2.	A1	14	Each	$25.00		$25.00	$350.00
3.	A2-1	4	Each	$25.00		$25.00	$100.00
4.	A4	1	Each	$50.00		$50.00	$50.00
5.	A5	4	Each	$50.00		$50.00	$200.00
5.	E1-2	16	Each	$84.00		$84.00	$1,344.00
6.	F1-3S	4	Each	$120.00		$120.00	$480.00
7.	G105-25	15	Each	$360.00		$360.00	$5,400.00
8.	1/0 ACSR	12	k Feet	$748.00		$748.00	$8,976.00
9.	M5-9LB	3	Each	$50.00		$50.00	$150.00
10.	M5-6	4	Each	$50.00		$50.00	$200.00
11.	M26-5L	25	Each	$77.00		$77.00	$1,925.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
			Subtotal - Construction w/o Contingencies				$28,175.00
			10%			Contingencies	$2,817.50
						Subtotal	$30,992.50
			24%			Engineering, General and Administrative	$7,438.20
						Project Total	$38,430.70

Table B - 10

PowerServices, Inc.

Construction Cost Estimate: High Density Street Lights Overhead Feed

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**Street Lights Overhead Feed - One Mile**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	Heads and Arms	35	Each	$192.00	$312.00	$504.00	$17,640.00
2.	K-14	35	Each	$30.00	$18.00	$48.00	$1,680.00
3.	#2 TPX	6000	Feet	$1.24	$1.60	$2.84	$17,040.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00

	Subtotal - Construction w/o Contingencies	$36,360.00
10%	Contingencies	$3,636.00
	Subtotal	$39,996.00
24%	Engineering, General and Administrative	$9,599.04
	Project Total	$49,595.04

Table B - 11

PowerServices, Inc.

Construction Cost Estimate: Overhead Services 2|0 TPX

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**Overhead Services 2/0 TPX - Per Service**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	2/0 TPX	115	Feet	$0.90	$1.20	$2.10	$241.50
2.	COMP 2/0 TPX	6	Each	$1.20	$3.96	$5.16	$30.96
3.	Bolt - eye 5/8"	1	Each	$1.20	$2.76	$3.96	$3.96
4.	WG	2	Each	$1.44	$2.40	$3.84	$7.68
5.	Pole 30/5	1	Each	$144.00	$150.00	$294.00	$294.00
6.	Pole GND	1	Each	$2.40	$2.93	$5.33	$5.33
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
			Subtotal - Construction w/o Contingencies				$583.43
			10%			Contingencies	$58.34
						Subtotal	$641.77
			24%			Engineering, General and Administrative	$154.03
						Project Total	$795.80

Table B - 12

PowerServices, Inc.

Construction Cost Estimate: Overhead Services 4/0 TPX

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**Overhead Services 4/0 TPX - Per Service**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	4/0 TPX	115	Feet	$1.32	$1.68	$3.00	$345.00
2.	COMP 4/0 TPX	6	Each	$1.44	$4.02	$5.46	$32.76
3.	Bolt - eye 5/8"	1	Each	$1.20	$2.76	$3.96	$3.96
4.	WG 4/0	2	Each	$1.44	$2.70	$4.14	$8.28
5.	Pole 30/5	1	Each	$144.00	$150.00	$294.00	$294.00
6.	Pole GND	1	Each	$2.40	$2.93	$5.33	$5.33
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00

	Subtotal - Construction w/o Contingencies	$689.33
10%	Contingencies	$68.93
	Subtotal	$758.26
24%	Engineering, General and Administrative	$181.98
	Project Total	$940.25

Table B - 13

PowerServices, Inc.

Construction Cost Estimate: Overhead Services 4/0 QUAD

Owner:		Date:	11/3/06 3:00 PM
Facility:		Est. By:	DSH HGB
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		Project No.:	
Description:	Overhead Services 4/0 QUAD - Per Service		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	4/0 QUAD	115	Feet	$1.80	$2.28	$4.08	$469.20
2.	COMP 4/0 QUAD	8	Each	$1.80	$4.08	$5.88	$47.04
3.	Bolt - eye 5/8"	1	Each	$1.20	$2.76	$3.96	$3.96
4.	WG 4/0	2	Each	$1.44	$2.70	$4.14	$8.28
5.	Pole 30/5	1	Each	$144.00	$150.00	$294.00	$294.00
6.	Pole GND	1	Each	$2.40	$2.93	$5.33	$5.33
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00

	Subtotal - Construction w/o Contingencies	$827.81
10%	Contingencies	$82.78
	Subtotal	$910.59
24%	Engineering, General and Administrative	$218.54
	Project Total	$1,129.13

Table B - 14

PowerServices, Inc.

Construction Cost Estimate: Overhead Services 350 QUAD

Owner:		Date:	11/3/06 3:00 PM
Facility:		Est. By:	DSH HGB
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		Project No.:	
Description: Overhead Services 350 QUAD - Per Service			

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	350 QUAD	115	Feet	$2.40	$4.44	$6.84	$786.60
2.	COMP 350 QUAD	8	Each	$2.40	$4.20	$6.60	$52.80
3.	Bolt - eye 5/8"	1	Each	$1.20	$2.76	$3.96	$3.96
4.	WG 4/0	2	Each	$1.44	$2.70	$4.14	$8.28
5.	Pole 30/5	1	Each	$144.00	$150.00	$294.00	$294.00
6.	Pole GND	1	Each	$2.40	$2.93	$5.33	$5.33
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
				Subtotal - Construction w/o Contingencies			$1,150.97
			10%	Contingencies			$115.10
				Subtotal			$1,266.07
			24%	Engineering, General and Administrative			$303.86
				Project Total			$1,569.92

Table B - 15

PowerServices, Inc.

Construction Cost Estimate: 3 Phase High Density Underground - Main Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**3 Phase High Density Underground - Main Feeder - One Mile**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	UC1	1	Each	$564.00	$588.00	$1,152.00	$1,152.00
2.	UR1-S (12 x 46)	6000	Feet	$10.80		$10.80	$64,800.00
3.	1000 MCM	10800	Feet	$4.20	$12.49	$16.69	$180,252.00
4.	1/0 UG	7200	Feet	$2.40	$3.30	$5.70	$41,040.00
5.	UM3E-9 (PME-9)	3	Each	$1,980.00	$19,446.00	$21,426.00	$64,278.00
6.	UM33 (PJE)	4	Each	$759.60	$1,670.00	$2,429.60	$9,718.40
7.	UM1-5C	5	Each	$198.00	$114.00	$312.00	$1,560.00
8.	UM1-6C	20	Each	$600.00	$363.00	$963.00	$19,260.00
9.	UM1-7C	27	Each	$448.00	$342.00	$790.00	$21,330.00
10.	UM48-1	9	Each	$48.00	$67.20	$115.20	$1,036.80
11.	UM48-2	20	Each	$63.60	$73.20	$136.80	$2,736.00
12.	UG7B (50kVA)	10	Each	$499.20	$2,460.00	$2,959.20	$29,592.00
13.	UG17-3B (150kVA)	10	Each	$936.00	$6,489.60	$7,425.60	$74,256.00
14.	UG17-3B (300kVA)	5	Each	$1,062.00	$8,794.80	$9,856.80	$49,284.00
15	UM6-34	6	Each	$43.20	$108.00	$151.20	$907.20
16.	UM6-28 (1000 MCM)	9	Each	$144.00	$216.00	$360.00	$3,240.00
17.	UM6-1	142	Each	$120.00	$216.00	$336.00	$47,712.00
18.	UM6-4	65	Each	$48.00	$384.00	$432.00	$28,080.00
19.	UM6-6	59	Each	$32.40	$15.60	$48.00	$2,832.00
20.	UM6-28 (1/0)	6	Each	$108.00	$84.00	$192.00	$1,152.00
21.	UM6-13	25	Each	$21.60	$32.40	$54.00	$1,350.00
22.	UM6-22	4	Each	$90.00	$158.40	$248.40	$993.60
23.	3-Pipes (4")	10800	Feet	$7.44	$11.04	$18.48	$199,584.00
24.	3-Pipes (2")	7200	Feet	$5.28	$4.32	$9.60	$69,120.00
25.	UJ1-4	15	Each	$23.76	$85.01	$108.77	$1,631.55
26.	UJ2-4	80	Each	$19.80	$63.07	$82.87	$6,629.60
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00

	Subtotal - Construction w/o Contingencies	$923,527.15
10%	Contingencies	$92,352.72
	Subtotal	$1,015,879.87
24%	Engineering, General and Administrative	$243,811.17
	Project Total	$1,259,691.03

Table B - 16

PowerServices, Inc.

Construction Cost Estimate: 3 Phase High Density Underground 1/0 ACSR - Local Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**3 Phase High Density Underground 1/0 ACSR - Local Feeder - One Mile**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	UC1	1	Each	$564.00	$588.00	$1,152.00	$1,152.00
2.	UR1-S (12 x 46)	6000	Feet	$10.80		$10.80	$64,800.00
3.	1/0 UG	18000	Feet	$2.40	$3.30	$5.70	$102,600.00
4.	UM33 (PJE)	5	Each	$759.60	$1,670.00	$2,429.60	$12,148.00
5.	UM1-5C	15	Each	$198.00	$114.00	$312.00	$4,680.00
6.	UM1-6C	10	Each	$600.00	$363.00	$963.00	$9,630.00
7.	UM1-7C	30	Each	$448.00	$342.00	$790.00	$23,700.00
8.	UM48-1	15	Each	$48.00	$67.20	$115.20	$1,728.00
9.	UM48-2	10	Each	$63.60	$73.20	$136.80	$1,368.00
10.	UG7B (50kVA)	15	Each	$499.20	$2,460.00	$2,959.20	$44,388.00
11.	UG17-3B (150kVA)	5	Each	$936.00	$6,489.60	$7,425.60	$37,128.00
12.	UG17-3B (300kVA)	5	Each	$1,062.00	$8,794.80	$9,856.80	$49,284.00
13.	UM6-34	6	Each	$43.20	$108.00	$151.20	$907.20
14.	UM6-28 (1/0)	9	Each	$120.00	$55.22	$175.22	$1,576.98
15.	UM6-1	170	Each	$92.00	$49.76	$141.76	$24,099.20
16.	UM6-4	59	Each	$48.00	$384.00	$432.00	$25,488.00
17.	UM6-6	56	Each	$32.40	$15.60	$48.00	$2,688.00
18.	UM6-13	25	Each	$21.60	$32.40	$54.00	$1,350.00
19.	UM6-22	15	Each	$90.00	$158.40	$248.40	$3,726.00
20.	3-Pipes (4")	18000	Feet	$7.44	$11.04	$18.48	$332,640.00
21.	UJ1-3	45	Each	$23.76	$85.01	$108.77	$4,894.65
22.	UJ2-4	40	Each	$19.80	$63.07	$82.87	$3,314.80
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
				Subtotal - Construction w/o Contingencies			$753,290.83
			10%	Contingencies			$75,329.08
				Subtotal			$828,619.91
			24%	Engineering, General and Administrative			$198,868.78
				Project Total			$1,027,488.69

Table B - 17

PowerServices, Inc.

Construction Cost Estimate: 3 Phase Low Density Underground 1/0 ACSR - Local Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description: 3 Phase Low Density Underground 1/0 ACSR - Local Feeder - One Mile			

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	UC1	1	Each	$564.00	$588.00	$1,152.00	$1,152.00
2.	UR1-S (12 x 46)	6000	Feet	$10.80		$10.80	$64,800.00
3.	1/0 UG	18000	Feet	$2.40	$3.30	$5.70	$102,600.00
4.	UM33 (PJE)	5	Each	$759.60	$1,670.00	$2,429.60	$12,148.00
5.	UM1-5C	10	Each	$198.00	$114.00	$312.00	$3,120.00
6.	UM1-6C	5	Each	$600.00	$363.00	$963.00	$4,815.00
7.	UM1-7C	20	Each	$448.00	$342.00	$790.00	$15,800.00
8.	UM48-1	10	Each	$48.00	$67.20	$115.20	$1,152.00
9.	UM48-2	10	Each	$63.60	$73.20	$136.80	$1,368.00
10.	UG7B (50kVA)	10	Each	$499.20	$2,460.00	$2,959.20	$29,592.00
11.	UG17-3B (150kVA)	5	Each	$936.00	$6,489.60	$7,425.60	$37,128.00
12.	UM6-34	10	Each	$43.20	$108.00	$151.20	$1,512.00
13.	UM6-28	9	Each	$120.00	$55.22	$175.22	$1,576.98
14.	UM6-1	65	Each	$92.00	$49.76	$141.76	$9,214.40
15.	UM6-4	60	Each	$48.00	$384.00	$432.00	$25,920.00
16.	UM6-6	20	Each	$32.40	$15.60	$48.00	$960.00
17.	UM6-13	50	Each	$21.60	$32.40	$54.00	$2,700.00
18.	UM6-22	5	Each	$90.00	$158.40	$248.40	$1,242.00
19.	3-Pipes (4")	18000	Feet	$7.44	$11.04	$18.48	$332,640.00
20.	UJ1-4	30	Each	$23.76	$85.01	$108.77	$3,263.10
21.	UJ2-4	20	Each	$19.80	$63.07	$82.87	$1,657.40
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
			Subtotal - Construction w/o Contingencies				$654,360.88
			10%	Contingencies			$65,436.09
				Subtotal			$719,796.97
			24%	Engineering, General and Administrative			$172,751.27
				Project Total			$892,548.24

Table B - 18

PowerServices, Inc.

Construction Cost Estimate: 1 Phase High Density Underground 1/0 ACSR - Local Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description:	**1 Phase High Density Underground 1/0 ACSR - Local Feeder - One Mile**		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	UA1	0	Each	$564.00	$588.00	$1,152.00	$0.00
2.	UR1-S (12 x 46)	6000	Feet	$10.80		$10.80	$64,800.00
3.	1/0 AWG 220mil	6000	Feet	$3.50	$2.10	$5.60	$33,600.00
4.	UM33 (PJE)	6	Each	$759.60	$1,670.40	$2,430.00	$14,580.00
5.	UM1-5C	25	Each	$198.00	$114.00	$312.00	$7,800.00
6.	UM1-7C	6	Each	$448.80	$342.00	$790.80	$4,744.80
7.	UM48-1	24	Each	$48.00	$67.20	$115.20	$2,764.80
8.	UG7B-50	25	Each	$499.20	$2,460.00	$2,959.20	$73,980.00
9.	UM6-34	3	Each	$43.20	$108.00	$151.20	$453.60
10.	UM6-28 (1/0)	6	Each	$180.00	$36.00	$216.00	$1,296.00
11.	UM6-1	54	Each	$92.40	$50.40	$142.80	$7,711.20
12.	UM6-4	24	Each	$48.00	$384.00	$432.00	$10,368.00
13.	UM6-6	24	Each	$32.40	$15.60	$48.00	$1,152.00
14.	UM6-7	36	Each	$24.00	$36.00	$60.00	$2,160.00
15.	UM6-13	36	Each	$21.60	$32.40	$54.00	$1,944.00
16.	UM6-21	6	Each	$68.40	$129.60	$198.00	$1,188.00
17.	UJ1-4	54	Each	$24.00	$85.20	$109.20	$5,896.80
18.	1 Pipe (4")	6000	Feet	$2.48	$3.70	$6.18	$37,080.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
				Subtotal - Construction w/o Contingencies			$271,519.20
			10%	Contingencies			$27,151.92
				Subtotal			$298,671.12
			24%	Engineering, General and Administrative			$71,681.07
				Project Total			$370,352.19

Table B - 19

PowerServices, Inc.

Construction Cost Estimate: 1 Phase Low Density Underground 1/0 ACSR - Local Feeder

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description: 1 Phase Low Density Underground 1/0 ACSR - Local Feeder - One Mile			

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	UA1	0	Each	$564.00	$588.00	$1,152.00	$0.00
2.	UR1-S (12 x 46)	6000	Feet	$10.80		$10.80	$64,800.00
3.	1/0 UG	6000	Feet	$3.50	$2.10	$5.60	$33,600.00
4.	UM33 (PJE)	5	Each	$759.60	$1,670.40	$2,430.00	$12,150.00
5.	UM1-5C	10	Each	$198.00	$114.00	$312.00	$3,120.00
6.	UM1-6C	0	Each	$600.00	$363.00	$963.00	$0.00
7.	UM1-7C	20	Each	$448.80	$342.00	$790.80	$15,816.00
8.	UM48-1	10	Each	$48.00	$67.20	$115.20	$1,152.00
9.	UM48-2	0	Each	$63.60	$73.20	$136.80	$0.00
10.	UG7B-50	15	Each	$499.20	$2,460.00	$2,959.20	$44,388.00
11.	UM6-34	5	Each	$43.20	$108.00	$151.20	$756.00
12.	UM6-28	9	Each	$120.00	$55.22	$175.22	$1,576.98
13.	UM6-1	45	Each	$92.00	$49.76	$141.76	$6,379.20
14.	UM6-4	30	Each	$48.00	$384.00	$432.00	$12,960.00
15.	UM6-6	20	Each	$32.40	$15.60	$48.00	$960.00
16.	UM6-13	50	Each	$21.60	$32.40	$54.00	$2,700.00
17.	UM6-22	5	Each	$90.00	$158.40	$248.40	$1,242.00
18	UJ1-4	45	Each	$23.76	$85.01	$108.77	$4,894.65
19.	1 Pipe (4")	6000	Feet	$2.48	$3.70	$6.18	$37,080.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
			Subtotal - Construction w/o Contingencies				$243,574.83
			10%			Contingencies	$24,357.48
						Subtotal	$267,932.31
			24%	Engineering, General and Administrative			$64,303.76
						Project Total	$332,236.07

Table B - 20

PowerServices, Inc.

Construction Cost Estimate: High Density Street Lights Underground Feed

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description: Street Lights Underground Feed - One Mile			

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	Street Light Poles, Arms and Heads	35	Each	$990.00	$666.00	$1,656.00	$57,960.00
2.	Hand Holes	35	Each	$216.00	$840.00	$1,056.00	$36,960.00
3.	Conduit	5300	Feet	$1.70	$2.90	$4.60	$24,380.00
4.	#2 TPX	6000	Feet	$1.24	$1.60	$2.84	$17,040.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
					Subtotal - Construction w/o Contingencies		$136,340.00
			10%		Contingencies		$13,634.00
					Subtotal		$149,974.00
			24%		Engineering, General and Administrative		$35,993.76
					Project Total		$185,967.76

Table B - 21

PowerServices, Inc.

Construction Cost Estimate: Underground Services 4/0 TPX

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description: Underground Services 4/0 TPX - Per Service			

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	4/0 TPX	115	Feet	$1.40	$4.26	$5.66	$650.90
2.	TR 6 x 24	115	Feet	$7.20		$7.20	$828.00
3.	Z-BAR Sec. Conn	3	Each	$18.00	$78.00	$96.00	$288.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
			Subtotal - Construction w/o Contingencies				$1,766.90
			10%	Contingencies			$176.69
				Subtotal			$1,943.59
			24%	Engineering, General and Administrative			$466.46
				Project Total			$2,410.05

Table B - 22

PowerServices, Inc.

Construction Cost Estimate: Underground Services 4/0 QUAD

Owner:		**Date:**	**11/3/06 3:00 PM**
Facility:		**Est. By:**	**DSH HGB**
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		**Project No.:**	
Description: Underground Services 4/0 QUAD - Per Service			

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	4/0 QUAD	115	Feet	$1.44	$4.32	$5.76	$662.40
2.	TR 6 x 24	115	Feet	$7.20		$7.20	$828.00
3.	Z-BAR Sec. Conn	4	Each	$24.00	$85.20	$109.20	$436.80
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00

	Subtotal - Construction w/o Contingencies	$1,927.20
10%	Contingencies	$192.72
	Subtotal	$2,119.92
24%	Engineering, General and Administrative	$508.78
	Project Total	$2,628.70

Table B - 23

PowerServices, Inc.

Construction Cost Estimate: Underground Services 350 TPX

Owner:		Date:	11/3/06 3:00 PM
Facility:		Est. By:	DSH HGB
Project: Cost-Effectiveness of Undergrounding Electric Distribution Facilities in Florida		Project No.:	
Description:	Underground Services 350 TPX - Per Service		

Line Item	Item or Construction Unit	Quantity	Unit of Measure	Labor Cost	Material Cost	Labor & Materials	Extended Cost
1.	350 TPX	115	Feet	$3.00	$4.50	$7.50	$862.50
2.	TR 6 x 24	115	Feet	$7.20		$7.20	$828.00
3.	Z-BAR Sec. Conn	3	Each	$18.00	$78.00	$96.00	$288.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
						$0.00	$0.00
				Subtotal - Construction w/o Contingencies			$1,978.50
			10%	Contingencies			$197.85
				Subtotal			$2,176.35
			24%	Engineering, General and Administrative			$522.32
				Project Total			$2,698.67

APPENDIX C

CIAC CALCULATIONS

Table C - 1

OVERHEAD to UNDERGROUND CONVERSION ADJUSTMENTS to CIAC
(Costs and adjustments on a per mile of conversion basis)

Conversion Benefit Adjustments to CIAC		Fixed Percentage Adjustments (%)	Fixed Cost Adjustments (dollars)
Base Conversion Cost Differential			$835,314.00
Outage Restoration Reduction	- Non-major events	5.60%	$46,775.42
	- Major Events	23.68%	$197,791.32
Reduced Revenue Losses	- Non-major events	0.13%	$1,109.25
	- Major events	2.45%	$20,443.99
Reduced O&M Costs	- Vegetation Management	8.96%	$74,808.42
	- Other O&M**	1.19%	$9,960.00
Cost of UG Locates		-0.78%	($6,540.00)
Loss of Pole Attachment Revenue		-1.11%	($9,300.00)
Reduced Accident Litigation & Award Payments		10.43%	$87,109.28
Non-Participant Benefit (Qualitative Others)		-	-
Elimination of NESC (Code) Violations		-	-
Elimination of Overhead Routing Problems		-	-
Fixed Adjustments		50.54%	$422,157.68

** Other O&M From FPL Data Responses Reflects Higher O&M for Underground / Mile
PowerServices Inc. Estimates Reflect Improved O&M Cost for Underground Based on Improved Technology and other utility experience

Power Services
Management Services For Utilities

Table C - 2 FPL Restoration Costs 5 Year Historical Analysis (Non-Major Event)

Year	Cost
2001	$86,700,000
2002	$95,900,000
2003	$105,900,000
2004	$87,800,000
2005	$101,200,000
Total	$477,500,000
Avg.$/ Yr.	$95,500,000

2004 Customer Interruptions OH	3574053
OH Miles	41105
OH Interruptions / mile	86.95
2004 Customer Interruptions UG	290127
UG Miles	24107
UG Interruptions / mile	12.03
OH Ratio	87.84%
UG Ratio	12.16%

Avg.$/ Yr.	$95,500,000	$95,500,000	**Avg.$/Yr**
OH Ratio	87.84%	12.16%	**UG Ratio**
	$83,888,670	$11,611,330	
OH Miles	41105	24107	**UG Miles**
	$2,041	$482	
Term	30	30	**Term**
CIAC Credit	**$46,775**		

Power Services
Management Services For Utilities®

Table C - 3

FPL Hurricane Restoration Costs

5 Year Historical Analysis

Year	Storm	Cost	Distribution	Total
2001	Gabrielle	30,600,000	82.5%	$25,245,000
2004	Charley			
2004	Francis			
2004	Jeanne	877,800,000	82.5%	$724,185,000
2005	Dennis			
2005	Katrina			
2005	Rita			
2005	Wilma	853,200,000	82.5%	$703,890,000

Total	$1,453,320,000

Years	5
Avg $/year	$290,664,000
OH Factor	0.975
	$283,397,400
Miles line	41105
$/Mile/Yr.	$6,894
Term	30

Years	5
Avg $/year	$290,664,000
UG Factor	0.025
	$7,266,600
Miles line	24107
$/Mile/Yr.	$301
Term	30

CIAC Credit	**$197,791**

Power Services

Management Services For Utilities®

Table C - 4 Tree Trimming Based on 3 / 6 Year Cycle

Annual Cost per Order # PSC-06-0781-PAA-EI	$71,900,000
Trimming Cycle Years*	3/6
Miles Overhead Lines	41105
Annual Costs/Mile	$1,749
Term / Years	30
CIAC Credit	**$52,475**

* Reflects cost of trimming mains on 3 year cycle and laterals on 6 year cycle

Power Services
Management Services For Utilities®

Table C - 5

Tree Trimming Based on 3 Year Cycle

Annual Cost per Order # PSC-06-0781-PAA-EI	$102,500,000
Trimming Cycle Years (all main feeders and laterals)	3
Miles Overhead Lines	41105
Annual Costs/Mile	$2,494
Term / Years	30
CIAC Credit	**$74,808**

Power Services

Management Services For Utilities®

Table C - 6

O&M Expenses (FPL)

2005

	Overhead	
583	Operations Expense (excludes tree trimming)	$6,863,327
593	Maintenance Expense (excludes tree trimming)	$40,327,273
Total		$47,190,600
	OH Miles	41105
	O&M Expense / Mile	$1,148

	Underground	
584	Operations Expense	$9,010,982
594	Maintenance Expense	$28,291,659
Total		$37,302,641
	UG Miles	24107
	UG Expense/ Mile	$1,547

OH/ UG Difference	-$399
Term	30
CIAC Credit	**-$11,980**

Power Services

Management Services For Utilities®

Table C - 7 O&M Expenses (Other Utilities)

2005 Utilities With Recent Underground Conversion	
Overhead (excludes tree trimming)	
583/593	$1,202
583/593	$517
O&M Expense / Mile	$860
Underground	
584/594	$714
584/594	$341
UG Expense/ Mile	$528

OH/ UG Difference	$332
Term	30
CIAC Credit	**$9,960**

Table C - 8

FPL Accidents

Year	Injuries	Fatalities
1990	24	8
1991	20	12
1992	26	8
1993	17	7
1994	26	5
1995	17	7
1996	19	4
1997	20	10
1998	23	7
1999	16	11
2000	22	4
2001	17	9
2002	31	6
2003	12	2
2004	26	9
2005	9	6
2006	3	1
Total	328	116
Non Electric		3
		113
Avg/yr	19.29	6.65

Injuries	$ Costs Per	Years	Miles OH	$ Per Mile
19.29	$5,000,000	30	41105	$70,408

Fatalities	$ Costs Per	Years	Miles OH	$ Per Mile
6.65	$2,500,000	30	41105	$12,128

	Annual Legal	Years	Miles OH	$ Per Mile
	$6,266,000	30	41105	$4,573

CIAC Credit	**$87,109**

Power Services

Management Services For Utilities

Table C - 9

FPL Outage 5 Year Historical Analysis
Revenue Loss (Non-Major Events)

Year	Customers w/o Power	Duration/Minutes	Hours	Avg kWh/ hour	Total
2001	4,734,645	154	2.6	2.70	32,835,179
2002	5,171,697	150	2.5	2.70	34,934,584
2003	5,543,996	152	2.5	2.70	37,948,773
2004	5,091,226	179	3.0	2.70	41,039,934
2005	4,961,431	204	3.4	2.70	45,579,375

Total	192,337,845

FERC Form 1 Data	
2005 kWh Sales	102,296,438,000
Annual Hours	8,760
Avg. Sales / hour	11677675.57
# Customers	4321892
Avg. kWh/hour	2.70

Years	5
Hours/year	38467569
OH Factor	0.878
	33774526
PC- Fuel	0.045
	1519854
Miles line	41105
$/ Mile	$37
Term	30
CIAC Credit	**$1,109**

Power Services

Management Services For Utilities

Table C - 10

FPL Hurricane Outage 5 Year Historical Analysis
Revenue Loss (Major Events)

Year	Storm	Customers	Duration/Days	Hours	Avg kWh/hour	Factor	Total kWh
2001	TS Barry	51,000	2	24	2.7	0.2683	1,773,356
2001	TS Gabrielle	812,000	7	24	2.7	0.2683	98,821,115
2001	TS Michelle	48,000	2	24	2.7	0.2683	1,669,041
2002	TS Edward	4,000	1	24	2.7	0.2683	69,543
2003	TS Henri	56,000	2	24	2.7	0.2683	1,947,214
2004	H Charley	900,000	16	24	2.7	0.2683	250,356,096
2004	H Frances	2,800,000	16	24	2.7	0.2683	778,885,632
2004	H Jeanne	1,700,000	17	24	2.7	0.2683	502,450,776
2005	TS Arlene	52,000	3	24	2.7	0.2683	2,712,191
2005	H Dennis	509,000	4	24	2.7	0.2683	35,397,570
2005	H Katrina	1,500,000	11	24	2.7	0.2683	286,866,360
2005	H Rita	140,000	3	24	2.7	0.2683	7,302,053
2005	H Wilma	3,200,000	22	24	2.7	0.2683	1,223,963,136
						Total	3,192,214,082

FERC Form 1 Data	
2005 kWh Sales	102,296,438,000
Annual Hours	8,760
Avg. Sales / hour	11677675.57
# Customers	4321892
Avg. kWh/hour	2.70

Years	5
Hours/year	638442816
OH Factor	0.975
	622481746
PC- Fuel	0.045
	28011679
Miles line	41105
$/ Mile	$681
Term	30
CIAC Credit	**$20,444**

Power Services
Management Services For Utilities

APPENDIX D

FPL DATA RESPONSES (EXCERPTS)

Q.
For FPL's system, please provide operations and maintenance ("O&M") costs for overhead and underground distribution lines.

A.

	FLORIDA POWER & LIGHT COMPANY	
	DISTRIBUTION LINE EXPENSES - OPERATIONS & MAINTENANCE	
	OVERHEAD VS. UNDERGROUND	
		December 31,
FERC		2005
	OVERHEAD	
583	OPERATIONS EXPENSES	$7,288,327
593	MAINTENANCE EXPENSES	78,413,273
	TOTAL OVERHEAD O&M EXPENSES	$85,701,600
	UNDERGROUND	
584	OPERATIONS EXPENSES	$9,010,982
594	MAINTENANCE EXPENSES	28,291,659
	TOTAL UNDERGROUND O&M EXPENSES	$37,302,641
	TOTAL DISTRIBUTION LINE EXPENSES - O&M EXPENSES	$123,004,241

Q.

Please provide Florida Power & Light's (FPL) system right-of-way (including easements) clearing and re-clearing policies and practices.

A.

FPL's current policy is to clear vegetation from feeders on a cycle that averages approximately 3 years. Line clearing of laterals is prioritized based on performance. FPL's Customer Trim Request (CTR) policy defers to regular maintenance those conditions that are not potentially hazardous and do not require immediate attention. When such conditions are identified, FPL will provide the customer with a list of qualified tree trimming contractors to conduct the job if they desire. FPL does inspect those potentially hazardous conditions reported by customers and, if necessary, takes immediate action to remediate. During restoration FPL will trim and clear lines of the debris that directly affects electric facilities, service lines or prevent access of FPL equipment so that work can be performed safely.

All work is performed in accordance with the current ANSI-A-300 for Tree Care Operations. The trimmer shall determine appropriate clearance by considering the tree species, re-growth rate, proximity to conductor, and combined movement of the tree and conductor in severe weather. FPL's vegetation maintenance policies and practices address vegetation that is or may become in conflict with our facilities and do not differentiate between right-of-ways and easements.

Q.

Please provide FPL system right-of-way tree trimming and re-clearing costs, including, separately if available, the costs for:

a. tree-trimming;
b. clearing and re-clearing;
c. danger tree removal;
d. mowing;
e. chemical treatment; and
f. side trimming.

A.

2005 distribution system vegetation expenses were $40.9 million. FPL does not track or account for vegetation expense in the detail requested.

Q.

For each of the 5 municipalities, please identify and provide local right of way tree trimming and re-clearing costs for each of the past 3 years, or such shorter period as may be avilable.

A.

FPL does not track distribution vegetation costs at the Municipality level. FPL does track these costs at a regional level.

- The City of Plantation is included within the South region.
- The Towns of Jupiter Island and Palm Beach are included within the East region.
- The City of Melbourne is included within the North region.
- The City of Naples is included within the West region.

Region	2005	2004	2003
East	12,488,949	13,004,405	13,449,309
North	10,967,177	10,477,469	13,544,362
South	11,694,581	10,126,751	9,628,692
West	5,724,097	8,181,045	6,939,393
Grand Total	**40,874,804**	**41,789,669**	**43,561,756**

Q.

For FPL's system, please provide the following outage data, including:

a. Summary tables for annual outages for each year of the most recent 10-year period, which include data showing:

(1) cause of outages;
(2) number of customers without power;
(3) length of outages; and
(4) cost to restore power.

b. For major storms (named tropical storms and hurricanes), please provide by storm for the most recent 10-years:

(1) name of storm;
(2) number of customers without power;
(3) length of outage; and
(4) cost to restore power.

A.

See attached.

QUESTION 15 ANSWERS:

a.(1-3) 1996-2005 Outage Causes, Customer Outages, Outage Durations

Primary Causes of Outage Events. Distribution Report for FPSC.			
FPL		Year	2005
	Number	Number of Customers	Average
	of Outage	without power	Duration
Cause	Events(N)	(CI)	(L-Bar)
(a.1)	(a.1)	(a.2)	(a.3)
Equipment Failure	26,752	1,714,721	249
Unknown	16,970	642,967	181
Vegetation	10,571	461,045	199
Other	8,865	320,890	184
Animal	8,711	174,185	113
Other Weather	7,250	348,222	144
Lightning	4,682	446,225	289
Equipment Connection	2,288	18,641	217
Vehicle	1,905	484,040	236
Remaining Causes	5,842	350,495	223
System Total	93,836	4,961,431	204

Primary Causes of Outage Events. Distribution Report for FPSC.			
FPL		Year	2004
	Number	Number of Customers	Average
	of Outage	without power	Duration
Cause	Events(N)	(CI)	(L-Bar)
(a.1)	(a.1)	(a.2)	(a.3)
Equipment Failure	21,633	1,627,190	217
Vegetation	15,225	726,865	174
Unknown	13,811	624,029	149
Animal	10,153	211,286	79
Other Weather	7,413	407,578	132
Other	6,575	245,029	178
Lightning	4,212	474,035	262
Equipment Connection	1,932	18,224	171
Vehicle	1,751	399,126	204
Remaining Causes	6,261	357,864	287
System Total	88,966	5,091,226	179

Primary Causes of Outage Events. Distribution Report for FPSC.			
FPL		Year	2003
	Number	Number of Customers	Average
	of Outage	without power	Duration
Cause	Events(N)	(CI)	(L-Bar)
(a.1)	(a.1)	(a.2)	(a.3)
Equipment Failure	22,728	1,709,617	200

Vegetation	19,307	826,750	155
Unknown	14,469	822,407	128
Animal	11,445	207,007	74
Other Weather	9,083	445,626	106
Lightning	5,074	473,454	233
Other	4,956	85,364	155
Equipment-Connection	2,339	25,212	163
Vehicle	1,791	544,049	194
All Remaining Causes	5,063	404,510	158
System Total	96,255	5,543,996	152

Primary Causes of Outage Events. Distribution Report for FPSC.			
FPL		Year	2002
	Number	Number of Customers	Average
	of Outage	without power	Duration
Cause	Events(N)	(CI)	(L-Bar)
(a.1)	(a.1)	(a.2)	(a.3)
Vegetation	16,906	679,954	149
Equipment Failure	14,696	1,642,659	203
Unknown	13,678	488,400	126
Animal	10,490	206,743	74
Other Weather	8,281	289,014	108
Lightning	4,625	454,292	227
Other	3,077	397,483	141
Equipment-Connection	1,875	26,474	160
Vehicle	1,645	539,354	191
All Remaining Causes	19,286	447,324	40
System Total	94,559	5,171,697	150

Primary Causes of Outage Events. Distribution Report for FPSC.			
FPL		Year	2001
	Number	Number of Customers	Average
	of Outage	without power	Duration
Cause	Events(N)	(CI)	(L-Bar)
(a.1)	(a.1)	(a.2)	(a.3)
Equipment Failure	25,989	1,645,098	199
Vegetation	13,408	641,304	159
Unknown	12,500	365,741	128
Animal	8,753	155,121	74
Other Weather	8,586	280,933	109
Lightning	5,008	432,933	229
Other	2,993	260,080	140
Equipment-Connection	1,712	25,954	161
Vehicle	1,569	454,501	202
All Remaining Causes	7,355	472,980	120
System Total	87,873	4,734,645	154

Primary Causes of Outage Events. Distribution Report for FPSC.

FPL		Year	2000
	Number	Number of Customers	Average
	of Outage	without power	Duration
Cause	Events(N)	(CI)	(L-Bar)
(a.1)	(a.1)	(a.2)	(a.3)
Equipment Failure	25,772	1,516,035	196
Vegetation	12,274	537,434	149
Unknown	13,233	438,251	123
Animal	9,480	179,734	74
Other Weather	7,536	285,194	112
Lightning	5,105	470,783	235
Other	3,008	243,127	141
Equipment-Connection	1,749	38,693	154
Vehicle	1,553	429,439	196
All Remaining Causes	5,953	457,281	122
System Total	85,663	4,595,971	152

Primary Causes of Outage Events. Distribution Report for FPSC.

FPL		Year	1999
	Number	Number of Customers	Average
	of Outage	without power	Duration
Cause	Events(N)	(CI)	(L-Bar)
(a.1)	(a.1)	(a.2)	(a.3)
Equipment Failure	24,243	1,497,381	190
Vegetation	12,301	580,015	140
Unknown	16,003	579,385	125
Animal	9,678	170,423	71
Other Weather	8,099	376,281	104
Lightning	4,580	512,669	214
Other	3,013	213,146	112
Equipment-Connection	1,428	26,230	136
Vehicle	1,474	344,952	182
All Remaining Causes	5,787	355,969	125
System Total	86,606	4,656,451	143

Primary Causes of Outage Events. Distribution Report for FPSC.

FPL		Year	1998
	Number	Number of Customers	Average
	of Outage	without power	Duration
Cause	Events(N)	(CI)	(L-Bar)
(a.1)	(a.1)	(a.2)	(a.3)
Equipment Failure	23,915	1,756,405	185
Vegetation	12,165	563,293	149
Unknown	24,150	938,664	147
Animal	7,910	162,840	75
Other Weather	8,502	505,621	121
Lightning	4,542	678,699	248
Other	2,338	260,323	107
Equipment-Connection	1,398	20,581	126

Vehicle	1,259	280,241	226
All Remaining Causes	3,958	477,612	132
System Total	90,137	5,644,279	153

Primary Causes of Outage Events. Distribution Report for FPSC.

FPL Year 1997

Cause (a.1)	Number of Outage Events(N) (a.1)	Number of Customers without power (CI) (a.2)	Average Duration (L-Bar) (a.3)
Equipment Failure	23,217	2,115,144	209
Vegetation	11,969	696,012	158
Unknown	29,357	1,024,317	155
Animal	9,032	200,067	81
Other Weather	10,028	533,015	135
Lightning	5,083	617,522	262
Other	1,279	228,315	114
Equipment-Connection	1,164	23,323	143
Vehicle	1,199	316,024	211
All Remaining Causes	2,952	257,254	139
System Total	95,280	6,010,993	165

Primary Causes of Outage Events. Distribution Report for FPSC.

FPL Year 1996

Cause (a.1)	Number of Outage Events(N) (a.1)	Number of Customers without power (CI) (a.2)	Average Duration (L-Bar) (a.3)
Equipment Failure	23,000	2,110,398	206
Vegetation	11,027	570,303	157
Unknown	28,348	1,118,849	158
Animal	7,272	123,288	80
Other Weather	6,799	312,916	129
Lightning	3,947	366,495	258
Other	1,730	253,624	143
Equipment-Connection	1,155	21,295	154
Vehicle	1,187	344,977	205
All Remaining Causes	3,359	323,184	144
System Total	87,824	5,545,329	166

a. (4) Restoration Costs

2005	$101.2M
2004	$87.8M
2003	$105.9M
2002	$95.9M
2001	$86.7M
2000	$79.9M
1999	$86.2M
1998	$86.5M

1997	Not Available
1996	Not Available

[illegible]

b. (1-3) Major Storms Table for the most recent 10- year period (1996-2005):

Year	Storm Name	Customers with Service Outages	Duration of Outages (Days)
1996	TS Josephine	Not Available	2
1998	TS Earl	30K	2
1998	Hurricane George	192K	3
1998	TS Mitch	216K	3
1999	Hurricane Floyd	182K	5
1999	TS Harvey	33K	1
1999	Hurricane Irene	1.7 Million	7
2000	Hurricane Gordon	141K	2
2001	TS Barry	51K	2
2001	TS Gabrielle	812K	7
2001	TS Michelle	48K	2
2002	TS Edouard	4K	1
2003	TS Henri	56K	2
2004	Hurricane Charley	900K	16
2004	Hurricane Frances	2.8 Million	16
2004	Hurricane Jeanne	1.7 Million	17
2005	TS Arlene	52K	3
2005	Hurricane Dennis	509K	4
2005	Hurricane Katrina	1.5 Million	11
2005	Hurricane Rita	140K	3
2005	Hurricane Wilma	3.2 Million	22

The duration of outages is number of days from the first customer interrupted to the last customer restored.

b.(4) Restoration Costs

1998 Georges	$12.3M
1999 Floyd	$21.0M
1999 Harvey	$2.5M
1999 Irene	$61.1M
2001Gabrielle	$30.6M
2004 Charley/Francis/Jeanne	$877.8M
2005 Dennis/Katrina/Rita/Wilma	$853.2M

Notes:

(1) FPL maintains only those storm costs charged to FPL's Storm and Property Damage Reserve

(2) Amounts are net of insurance recoveries, 3rd party reimbursements and include amounts charged to capital

(3) Amounts include costs determined by FPSC to be charged to normal operating costs

Q.
What are FPL's underground construction standards for different types of lines? For example, what type cable; is it in conduit; is it encased? What, if any, other applicable standards exist?

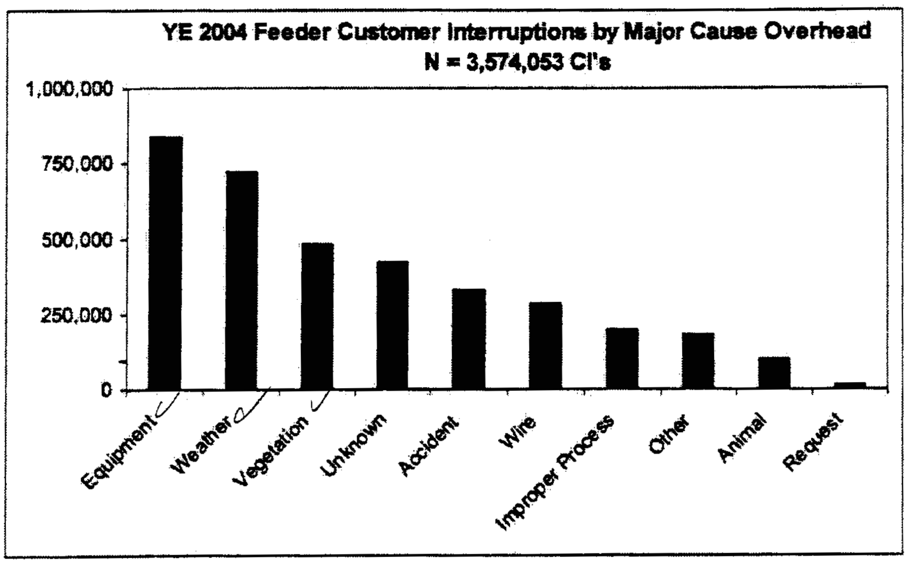
A.
The Power Systems Distribution Construction Standards, December 2005 edition, contains the current standards of distribution construction for FPL . See FPL's response to the Towns' First Request for Production of Documents, No. 17. The second page from the front cover indicates the different sections within the book. The standard cables used at the present time are Aluminum, 25 KV insulation, 3-1/c XPE (crosslinked polyethelene); 1000 KCMIL for feeders (main circuits) and 1/0 for laterals (branch circuits). All cables installed are in conduit, direct buried in earth, and it is not encased in concrete.

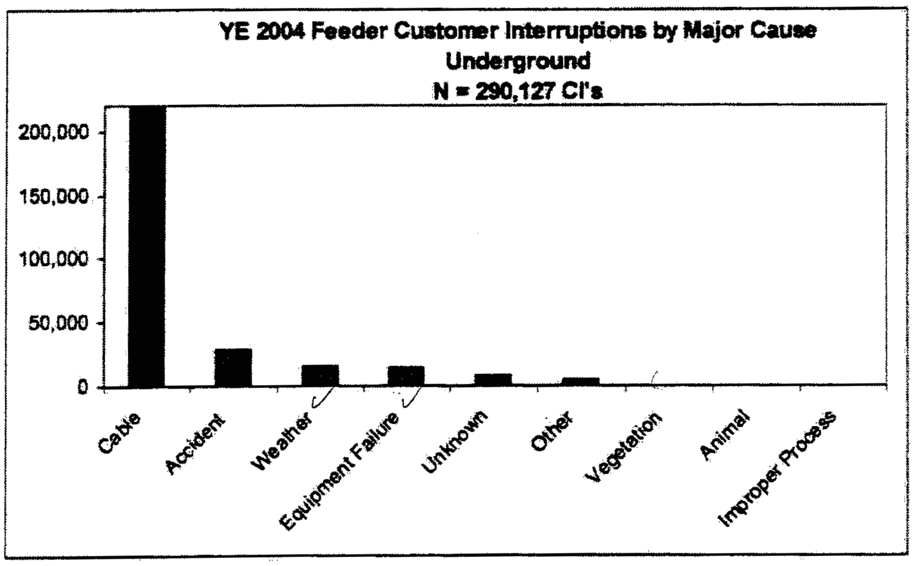
There are no other applicable standards.

Q.

With reference to page 3 of the 2005 Thermovision Review, for each Major Cause shown in the graph on this page, please identify the number of Feeder Customer Interruptions that were experienced due to the respective cause's impact on OH and on UG facilities.

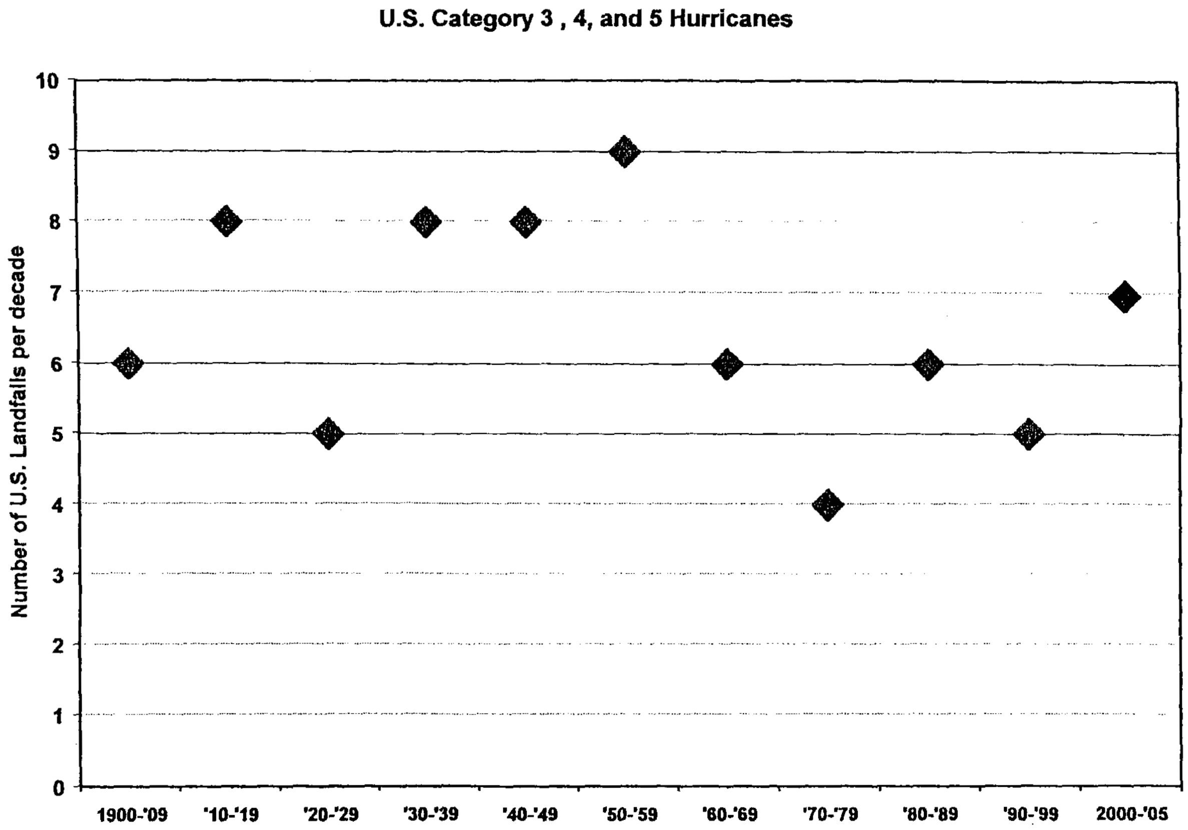
A.





Partial Response to Request No. 44

Plan For Heightened Hurricane Activity
Hurricane Cycles



SOURCE: Dr. Jay Apt, Carnegie Mellon University

"We believe this heightened period of hurricane activity will continue due to multi-decadal variance...The current period of heightened activity could last another 10-20 years." – Max Mayfield, Director Tropical Prediction Center, Senate Subcommittee Oversight Hearing Testimony, September 20, 2005.

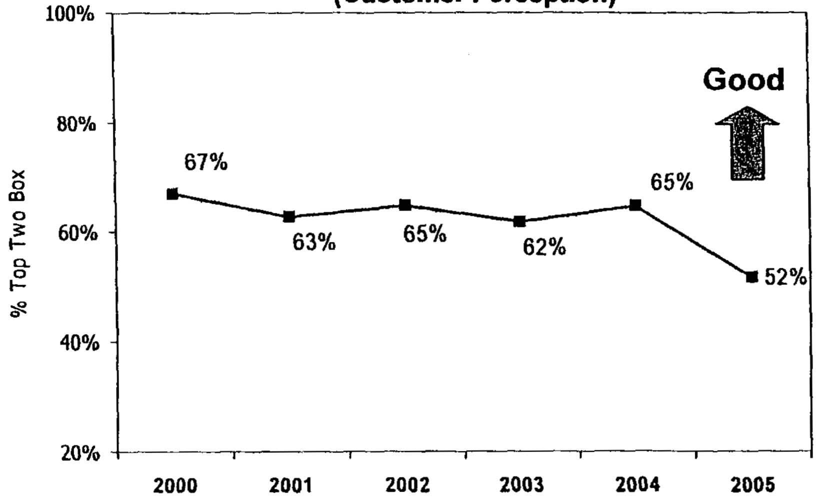
Docket No. 060150-EI
FPL Response - Towns Discovery
FPL 01109

Plan For Heightened Hurricane Activity

Increased Customer Dissatisfaction

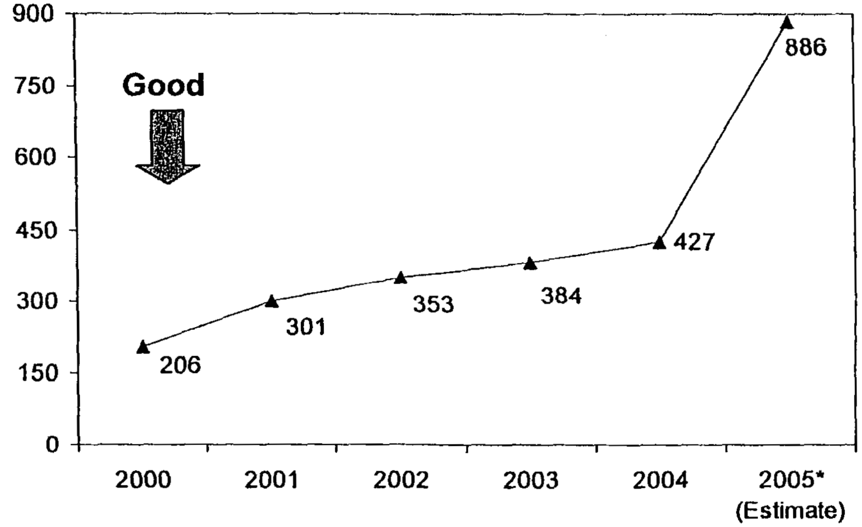
Market Research for Preventative Maintenance

(Customer Perception)



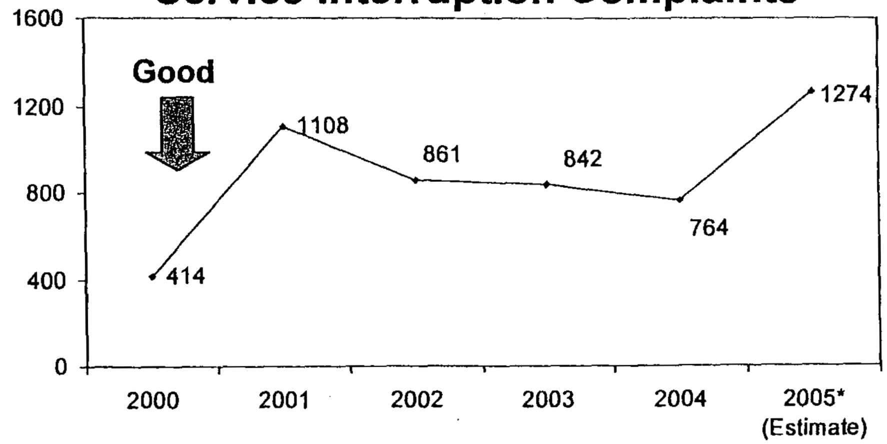
Source: 2000-2004 Residential Loyalty, 2005: Indicator Study, 2000-2003 included both spring and fall waves, 2004-2005 only included spring waves

Physical Facilities Complaints



- Customer perception of preventative maintenance has had a dramatic decline since the 2004 hurricane season
- In the Hurricane Dennis post-storm survey, *Keeping Trees Trimmed* was the worst rated preventative maintenance attribute
- Customers believe that their outages during category 1 and tropical storms are directly related to a lack of line clearing
- In 2005, physical facilities and service interruption complaints increasing significantly

Service Interruption Complaints



Docket No. 060150-EI
FPL Response - Towns Discovery
FPL 01111

APPENDIX E

FPL FERC FORM NO. 1 DATED 2005/Q4 (EXCERPTS)

Name of Respondent	This Report Is:	Date of Report (Mo, Da, Yr)	Year/Period of Report
Florida Power & Light Company	(1) [X] An Original (2) [ ] A Resubmission	/ /	End of 2005/Q4

ELECTRIC OPERATING REVENUES (Account 400)

1. The following instructions generally apply to the annual version of these pages. Do not report quarterly data in columns (c), (e), (f), and (g). Unbilled revenues and MWH related to unbilled revenues need not be reported separately as required in the annual version of these pages.
2. Report below operating revenues for each prescribed account, and manufactured gas revenues in total.
3. Report number of customers, columns (f) and (g), on the basis of meters, in addition to the number of flat rate accounts; except that where separate meter readings are added for billing purposes, one customer should be counted for each group of meters added. The -average number of customers means the average of twelve figures at the close of each month.
4. If increases or decreases from previous period (columns (c),(e), and (g)), are not derived from previously reported figures, explain any inconsistencies in a footnote.

Line No.	Title of Account (a)	Operating Revenues Year to Date Quarterly/Annual (b)	Operating Revenues Previous year (no Quarterly) (c)
1	Sales of Electricity		
2	(440) Residential Sales	5,222,943,013	4,755,319,423
3	(442) Commercial and Industrial Sales		
4	Small (or Comm.) (See Instr. 4)	3,566,226,680	3,265,390,614
5	Large (or Ind.) (See Instr. 4)	264,170,187	250,922,909
6	(444) Public Street and Highway Lighting	63,077,411	58,284,323
7	(445) Other Sales to Public Authorities	4,095,482	4,512,703
8	(446) Sales to Railroads and Railways	7,664,912	7,051,418
9	(448) Interdepartmental Sales		
10	TOTAL Sales to Ultimate Consumers	9,128,177,685	8,341,481,390
11	(447) Sales for Resale	206,593,202	194,030,555
12	TOTAL Sales of Electricity	9,334,770,887	8,535,511,945
13	(Less) (449.1) Provision for Rate Refunds	-7,412,993	-176,466
14	TOTAL Revenues Net of Prov. for Refunds	9,342,183,880	8,535,688,411
15	Other Operating Revenues		
16	(450) Forfeited Discounts	16,169,501	15,469,299
17	(451) Miscellaneous Service Revenues	28,418,901	28,836,315
18	(453) Sales of Water and Water Power		
19	(454) Rent from Electric Property	29,698,830	32,125,701
20	(455) Interdepartmental Rents		
21	(456) Other Electric Revenues	31,110,789	70,315,371
22			
23			
24			
25			
26	TOTAL Other Operating Revenues	105,398,021	146,746,686
27	TOTAL Electric Operating Revenues	9,447,581,901	8,682,435,097

Name of Respondent	This Report Is:	Date of Report (Mo, Da, Yr)	Year/Period of Report
Florida Power & Light Company	(1) [X] An Original (2) [ ] A Resubmission	/ /	End of 2005/Q4

ELECTRIC OPERATING REVENUES (Account 400)

5. Commercial and industrial Sales, Account 442, may be classified according to the basis of classification (Small or Commercial, and Large or Industrial) regularly used by the respondent if such basis of classification is not generally greater than 1000 Kw of demand. (See Account 442 of the Uniform System of Accounts. Explain basis of classification in a footnote.)
6. See pages 108-109, Important Changes During Period, for important new territory added and important rate increase or decreases.
7. For Lines 2,4,5,and 6, see Page 304 for amounts relating to unbilled revenue by accounts.
8. Include unmetered sales. Provide details of such Sales in a footnote.

MEGAWATT HOURS SOLD		AVG.NO. CUSTOMERS PER MONTH		Line No.
Year to Date Quarterly/Annual (d)	Amount Previous year (no Quarterly) (e)	Current Year (no Quarterly) (f)	Previous Year (no Quarterly) (g)	
				1
54,348,188	52,502,422	3,828,375	3,744,920	2
				3
43,467,783	42,063,955	469,976	458,057	4
3,912,708	3,964,149	20,391	18,516	5
424,164	413,075	2,895	2,768	6
49,073	58,048	232	236	7
94,522	93,223	23	23	8
				9
102,296,438	99,094,872	4,321,892	4,224,520	10
3,659,653	4,481,870	4	4	11
105,956,091	103,576,742	4,321,896	4,224,524	12
				13
105,956,091	103,576,742	4,321,896	4,224,524	14

Line 12, column (b) includes $ 0 of unbilled revenues.

Line 12, column (d) includes 0 MWH relating to unbilled revenues

Schedule Page: 300 Line No.: 14 Column: d

Does not include the decrease in energy delivered to customers but not billed of 308,487 MWH for 2005.

Schedule Page: 300 Line No.: 14 Column: e

Does not include the increase in energy delivered to customers but not billed of 58,757 MWH for 2004.

Schedule Page: 300 Line No.: 21 Column: b

Includes ($11,442,883) net change in unbilled revenues for 2005.

Schedule Page: 300 Line No.: 21 Column: c

Includes $965,508 net change in unbilled revenues for 2004.

Name of Respondent Florida Power & Light Company	This Report Is: (1) [X] An Original (2) [ ] A Resubmission	Date of Report (Mo, Da, Yr) / /	Year/Period of Report End of 2005/Q4

SALES OF ELECTRICITY BY RATE SCHEDULES

1. Report below for each rate schedule in effect during the year the MWH of electricity sold, revenue, average number of customer, average Kwh per customer, and average revenue per Kwh, excluding date for Sales for Resale which is reported on Pages 310-311.
2. Provide a subheading and total for each prescribed operating revenue account in the sequence followed in "Electric Operating Revenues," Page 300-301. If the sales under any rate schedule are classified in more than one revenue account, List the rate schedule and sales data under each applicable revenue account subheading.
3. Where the same customers are served under more than one rate schedule in the same revenue account classification (such as a general residential schedule and an off peak water heating schedule), the entries in column (d) for the special schedule should denote the duplication in number of reported customers.
4. The average number of customers should be the number of bills rendered during the year divided by the number of billing periods during the year (12 if all billings are made monthly).
5. For any rate schedule having a fuel adjustment clause state in a footnote the estimated additional revenue billed pursuant thereto.
6. Report amount of unbilled revenue as of end of year for each applicable revenue account subheading.

Line No.	Number and Title of Rate schedule (a)	MWh Sold (b)	Revenue (c)	Average Number of Customers (d)	KWh of Sales Per Customer (e)	Revenue Per KWh Sold (f)
1	Residential:					
2	011-012	36,730	7,008,927	4,314	8,514	0.1908
3	044, 047, 048	54,305,198	5,215,358,444	3,823,849	14,202	0.0960
4	045	6,260	575,642	212	29,528	0.0920
5	Subtotal	54,348,188	5,222,943,013	3,828,375	14,196	0.0961
6	Commercial:					
7	011-012	70,792	9,938,877	2,985	23,716	0.1404
8	054-056	2,536,816	167,638,320	371	6,837,779	0.0661
9	062	6,442,550	500,628,828	1,922	3,352,003	0.0777
10	063	611,553	46,332,229	40	15,288,825	0.0758
11	064	3,730,937	269,334,043	882	4,230,087	0.0722
12	065	893,683	64,206,678	54	16,549,685	0.0718
13	067-068	5,882,494	585,859,109	365,781	16,082	0.0996
14	069	4,550	428,242	247	18,421	0.0941
15	070	397,011	34,569,639	1,563	254,006	0.0871
16	071	13,703	1,038,695	2	6,851,500	0.0758
17	072	22,518,428	1,846,883,431	90,949	247,594	0.0820
18	073	134,298	9,882,165	33	4,069,636	0.0736
19	074	74,552	4,703,735	10	7,455,200	0.0631
20	075	60,398	4,317,710	3	20,132,667	0.0715
21	078	18	4,442	76	237	0.2468
22	085	14,957	1,389,209	4	3,739,250	0.0929
23	086	19	1,647	6	3,167	0.0867
24	087	81,017	19,061,098	5,047	16,053	0.2353
25	851-853	7	8,583	1	7,000	1.2261
26	Subtotal	43,467,783	3,566,226,680	469,976	92,489	0.0820
27	Industrial:					
28	011	601	79,114	32	18,781	0.1316
29	054	909,587	59,424,644	88	10,336,216	0.0653
30	055	1,469,623	82,791,321	16	91,851,438	0.0563
31	056	32,267	2,385,248	20	1,613,350	0.0739
32	062	232,961	18,707,383	73	3,191,247	0.0803
33	063	43,439	3,482,871	3	14,479,667	0.0802
34	064	172,082	12,347,126	29	5,933,862	0.0718
35	065	132,500	9,478,439	9	14,722,222	0.0715
36	067-068	112,355	12,323,236	18,316	6,134	0.1097
37	069	278	28,196	32	8,688	0.1014
38	070	11,997	1,157,665	77	155,805	0.0965
39	071	51,349	3,618,894	2	25,674,500	0.0705
40	072	342,215	29,971,835	1,656	206,652	0.0876
41	TOTAL Billed	0	0	0	0	0.0000
42	Total Unbilled Rev.(See Instr. 6)	0	0	0	0	0.0000
43	TOTAL	0	0	0	0	0.0000

Name of Respondent	This Report Is:	Date of Report (Mo, Da, Yr)	Year/Period of Report
Florida Power & Light Company	(1) [X] An Original (2) [ ] A Resubmission	/ /	End of 2005/Q4

SALES OF ELECTRICITY BY RATE SCHEDULES

1. Report below for each rate schedule in effect during the year the MWH of electricity sold, revenue, average number of customer, average Kwh per customer, and average revenue per Kwh, excluding date for Sales for Resale which is reported on Pages 310-311.
2. Provide a subheading and total for each prescribed operating revenue account in the sequence followed in "Electric Operating Revenues," Page 300-301. If the sales under any rate schedule are classified in more than one revenue account, List the rate schedule and sales data under each applicable revenue account subheading.
3. Where the same customers are served under more than one rate schedule in the same revenue account classification (such as a general residential schedule and an off peak water heating schedule), the entries in column (d) for the special schedule should denote the duplication in number of reported customers.
4. The average number of customers should be the number of bills rendered during the year divided by the number of billing periods during the year (12 if all billings are made monthly).
5. For any rate schedule having a fuel adjustment clause state in a footnote the estimated additional revenue billed pursuant thereto.
6. Report amount of unbilled revenue as of end of year for each applicable revenue account subheading.

Line No.	Number and Title of Rate schedule (a)	MWh Sold (b)	Revenue (c)	Average Number of Customers (d)	KWh of Sales Per Customer (e)	Revenue Per KWh Sold (f)
1	073	37,934	3,037,790	13	2,918,000	0.0801
2	074	28,929	2,005,891	5	5,785,800	0.0693
3	075	38,178	2,727,860	3	12,726,000	0.0715
4	082	16,618	1,211,503	1	16,618,000	0.0729
5	085	87,134	6,663,925	9	9,681,556	0.0765
6	090	153,080	9,745,639	3	51,026,667	0.0637
7	091	28,902	2,041,147	2	14,451,000	0.0706
8	852-853	10,679	940,460	2	5,339,500	0.0881
9	Subtotal	3,912,708	264,170,187	20,391	191,884	0.0675
10	Public Street & Highway Lighting:					
11	086	59,164	5,079,767	770	76,836	0.0859
12	087	365,000	57,997,644	2,125	171,765	0.1589
13	Subtotal	424,164	63,077,411	2,895	146,516	0.1487
14	Other Sales to Public Authorities					
15	019	18,506	2,118,769	231	80,113	0.1145
16	090	30,567	1,976,713	1	30,567,000	0.0647
17	Subtotal	49,073	4,095,482	232	211,522	0.0835
18	Railroads and Railways:					
19	080	94,522	7,664,912	23	4,109,652	0.0811
20	Subtotal	94,522	7,664,912	23	4,109,652	0.0811
21						
22						
23	Total	102,296,438	9,128,177,685	4,321,892	23,669	0.0892
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41	TOTAL Billed	0	0	0	0	0.0000
42	Total Unbilled Rev.(See Instr. 6)	0	0	0	0	0.0000
43	TOTAL	0	0	0	0	0.0000

Name of Respondent	This Report is:	Date of Report (Mo, Da, Yr)	Year/Period of Report
Florida Power & Light Company	(1) X An Original (2) _ A Resubmission	/ /	2005/Q4

FOOTNOTE DATA

Schedule Page: 304 Line No.: 2 Column: d

Average Class Code 11 Users is 4,314.

Schedule Page: 304 Line No.: 7 Column: d

Average Class Code 11 Users is 2,985.

Schedule Page: 304 Line No.: 28 Column: d

Average Class Code 11 Users is 32.

Schedule Page: 304.1 Line No.: 23 Column: c

Fuel Adjustment included in Revenues: $4,144,471,929.

Schedule Page: 304 Line No.: 42 Column: b

Includes $0 of Unbilled Revenues.

Schedule Page: 304 Line No.: 42 Column: c

Includes $0 of Unbilled Revenues.

APPENDIX F

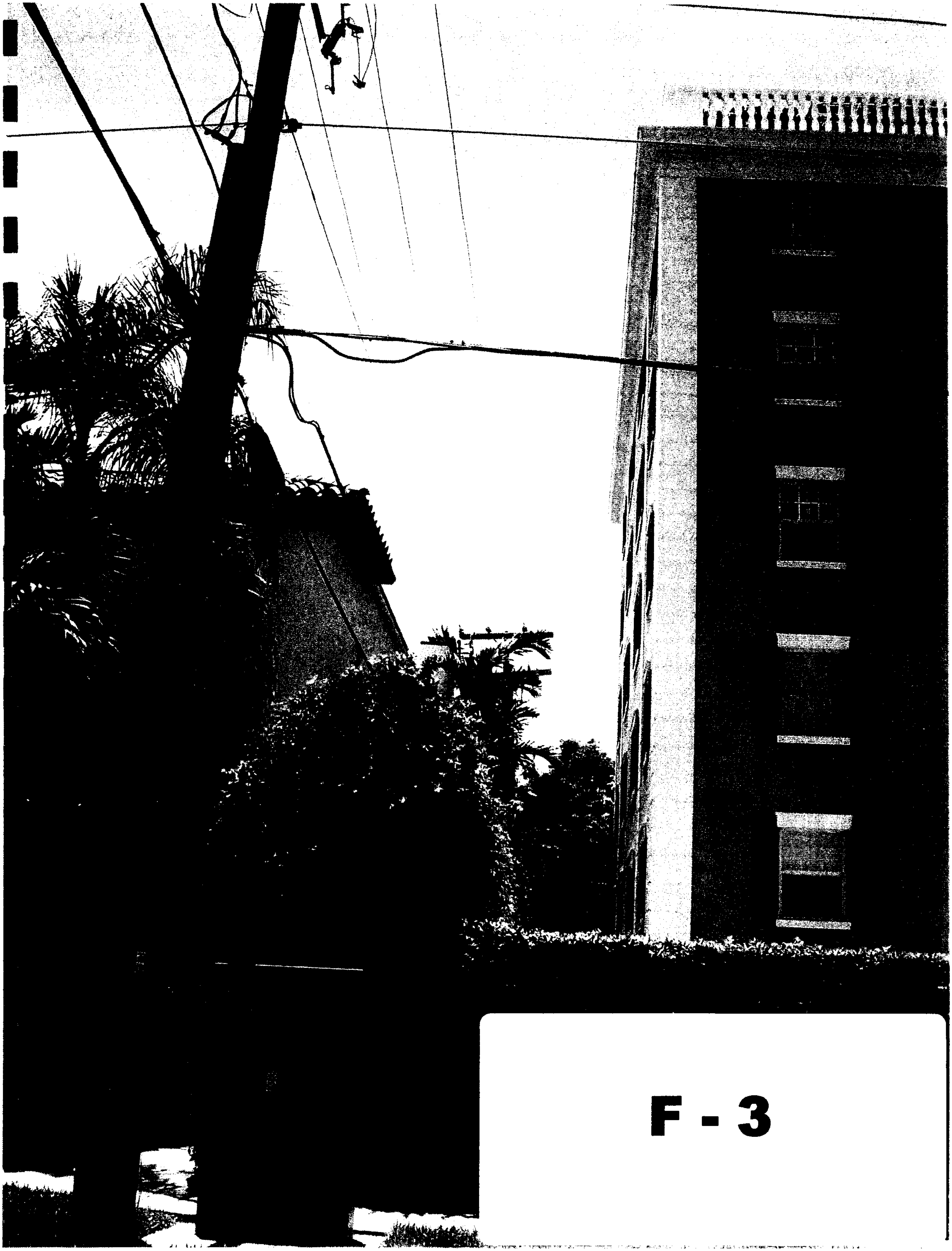
EXAMPLES OF SITE SPECIFIC DISTRIBUTION CONDITIONS TO BE ACCOUNTED FOR IN CIAC CALCULATIONS PHOTOGRAPHS

F - 1

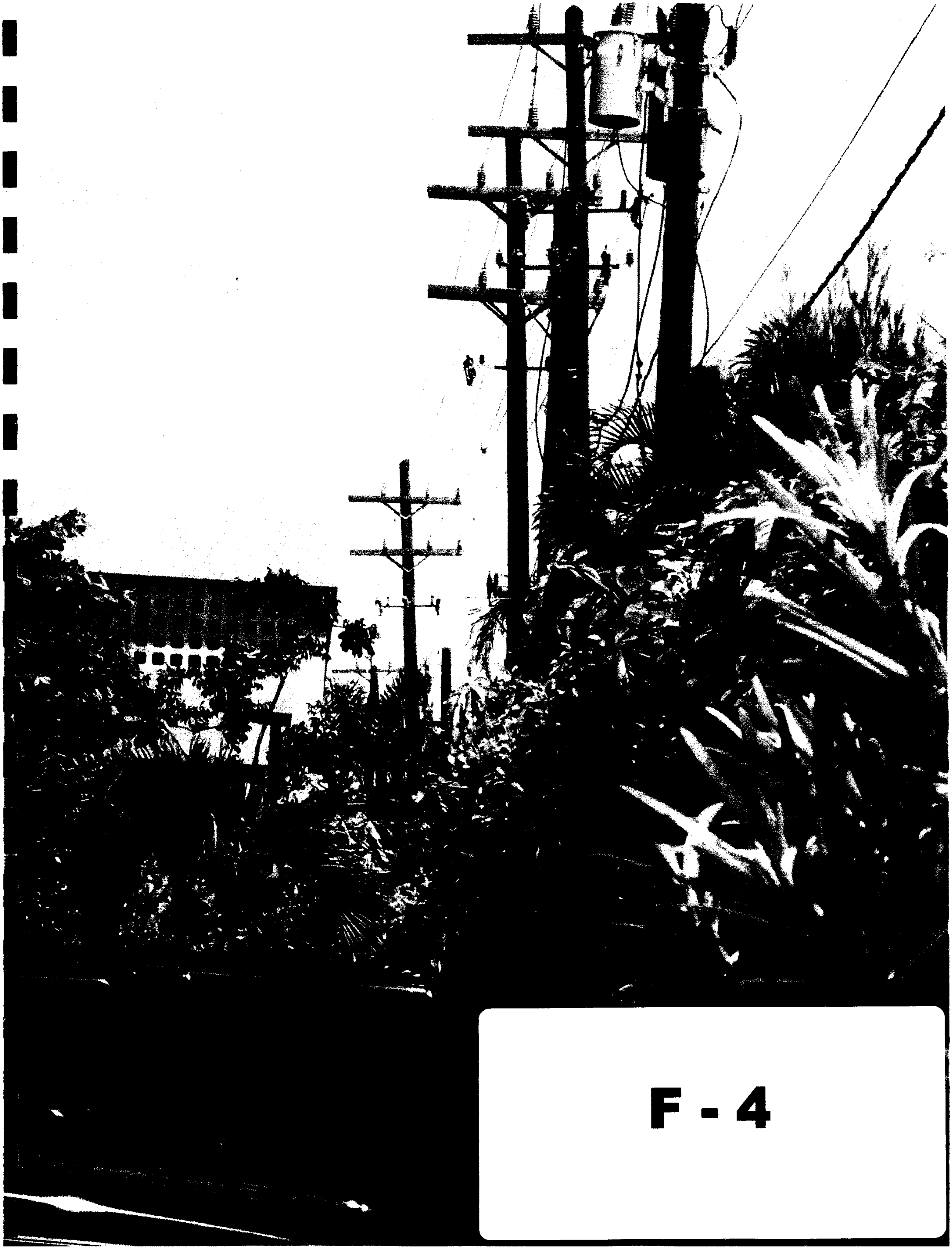
EXAMPLES OF SITE SPECIFIC DISTRIBUTION CONDITIONS TO BE ACCOUNTED FOR IN CIAC CALCULATIONS

PAGE NUMBER	DESCRIPTION OF OBSERVATION
F - 2	Heavy vegetation; difficult access
F - 3	Difficult access; NESC clearance issues
F - 4	Heavy vegetation; difficult access, possible NESC clearance issues
F - 5	Heavy vegetation; difficult access, possible NESC clearance issues
F - 6	Difficult access; NESC clearance issues
F - 7	NESC clearance issues
F - 8	Heavy vegetation; difficult access, possible NESC clearance issues
F - 9	Heavy vegetation; difficult access, possible NESC clearance issues
F - 10	Heavy vegetation; difficult access, possible NESC clearance issues
F - 11	Heavy vegetation; difficult access
F - 12	Heavy vegetation; difficult access
F - 13	Pole is completely deteriorated and requires replacement
F - 14	NESC clearance issues

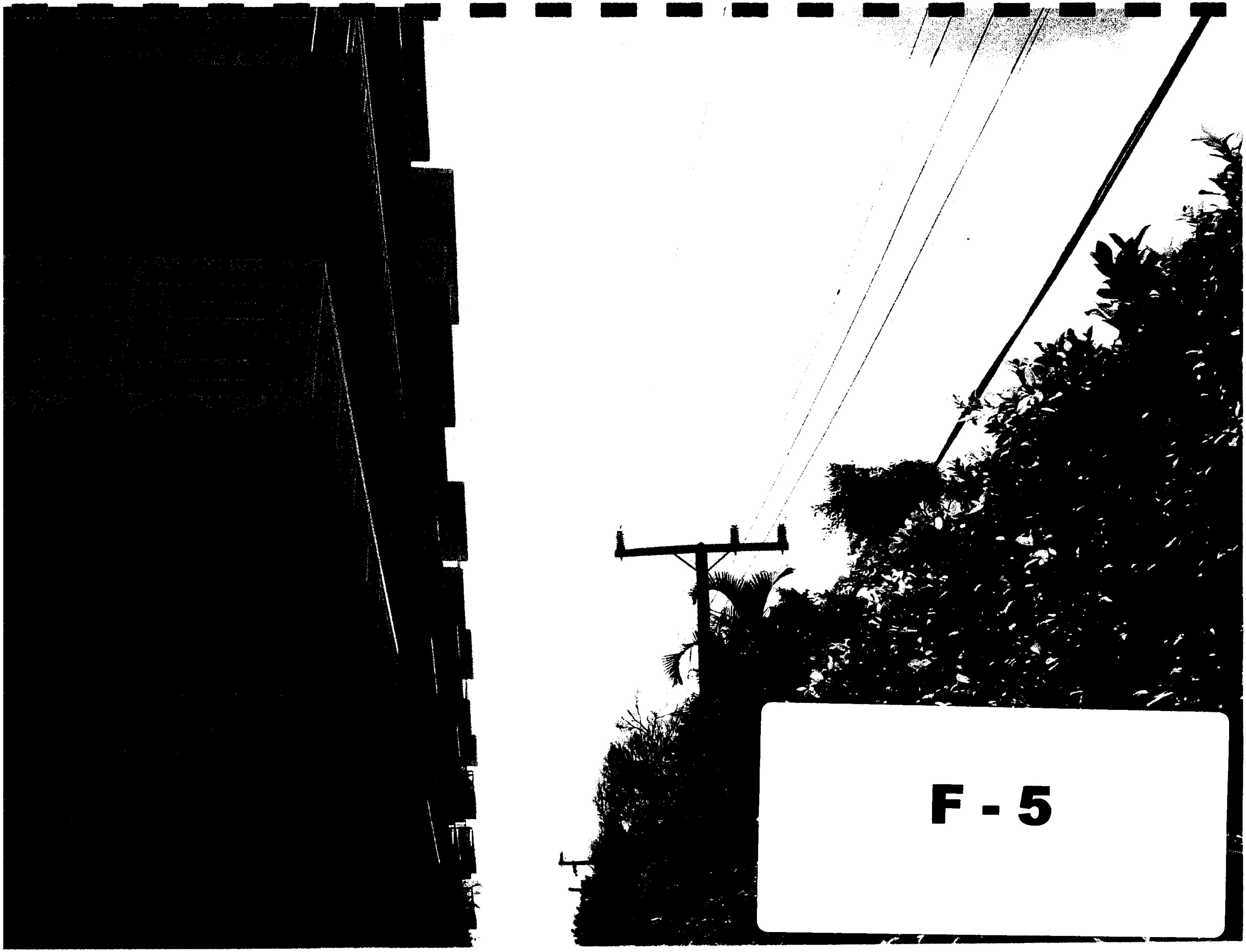

F - 2

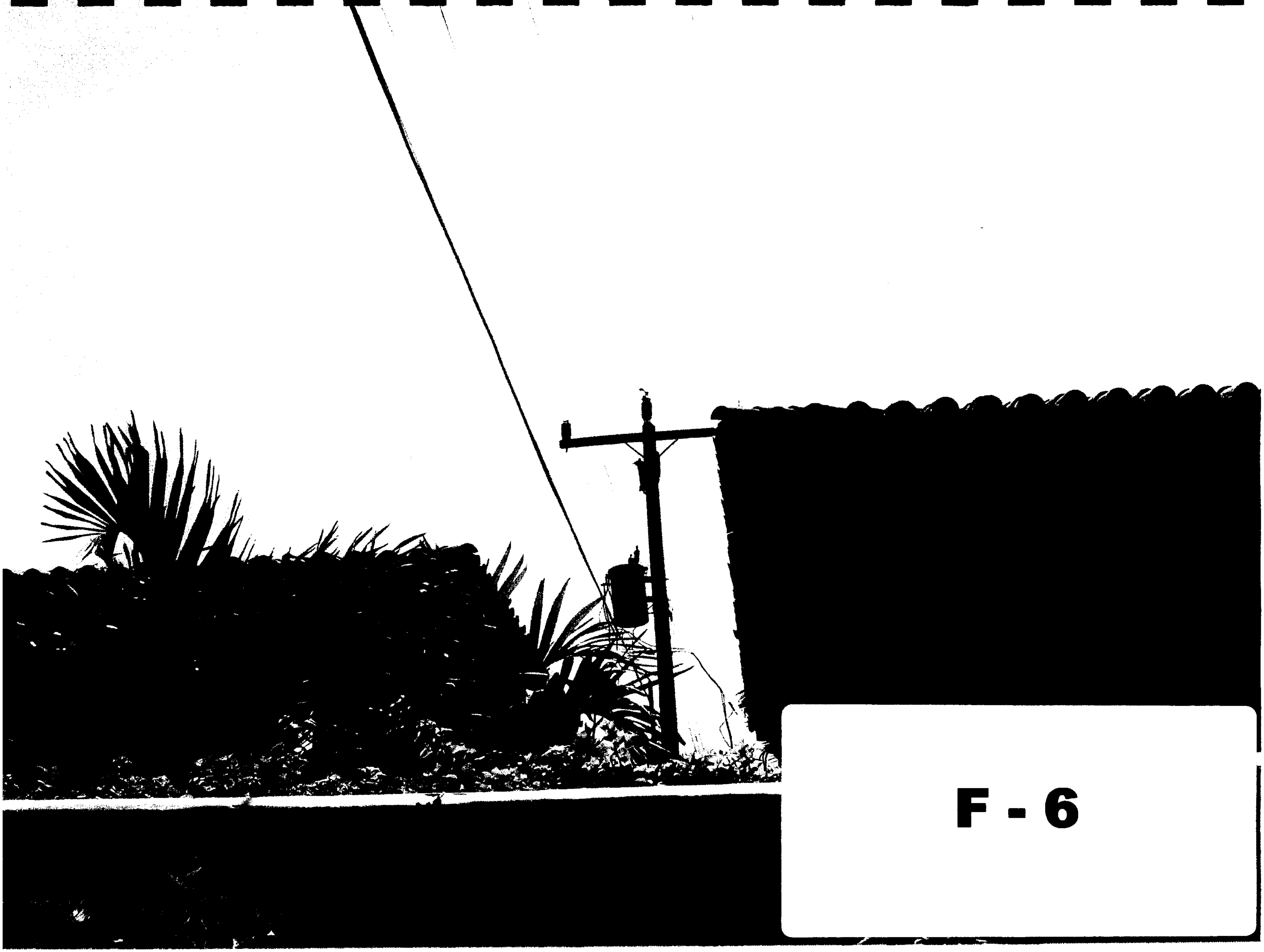


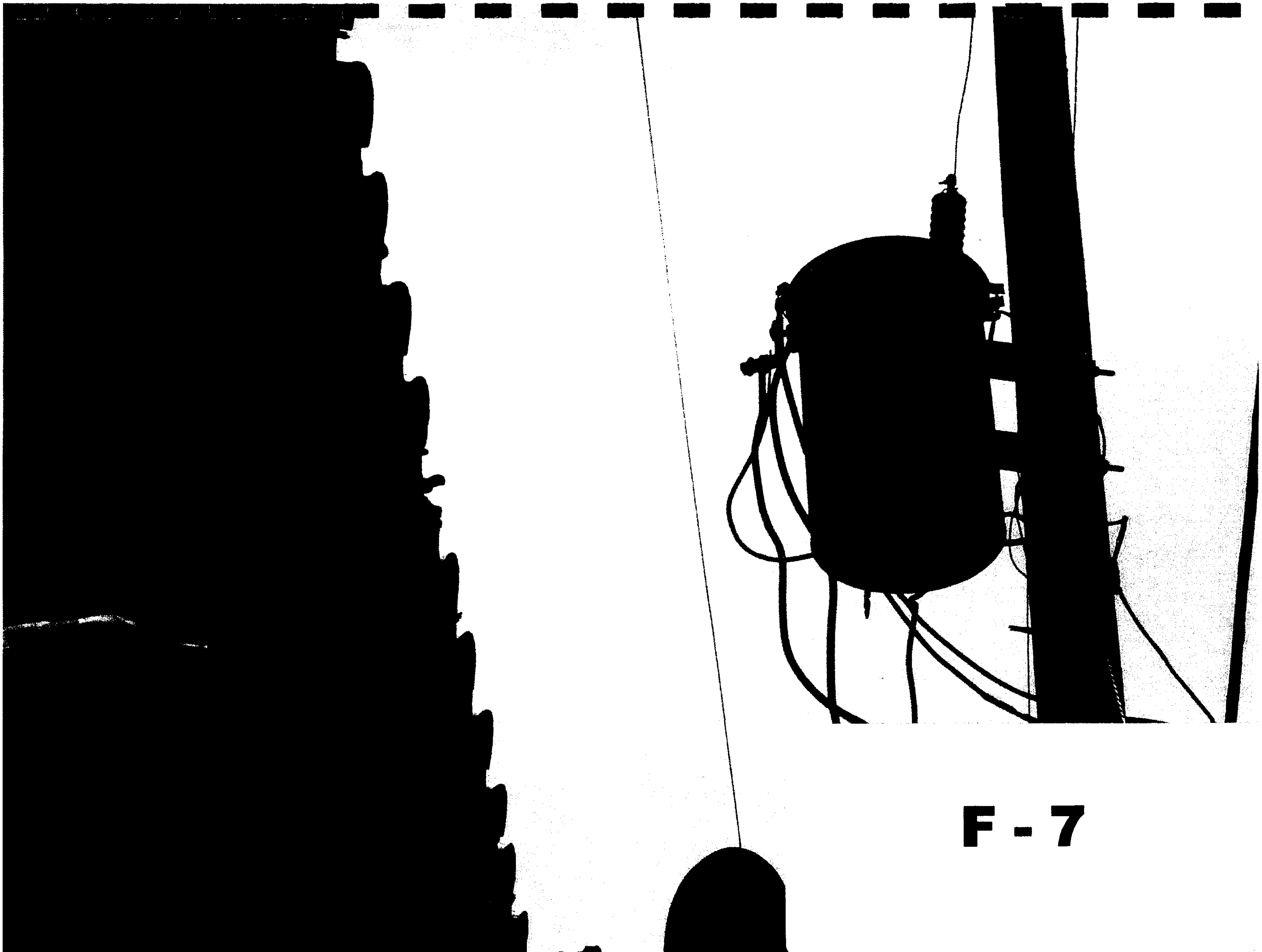
F - 3



F - 4

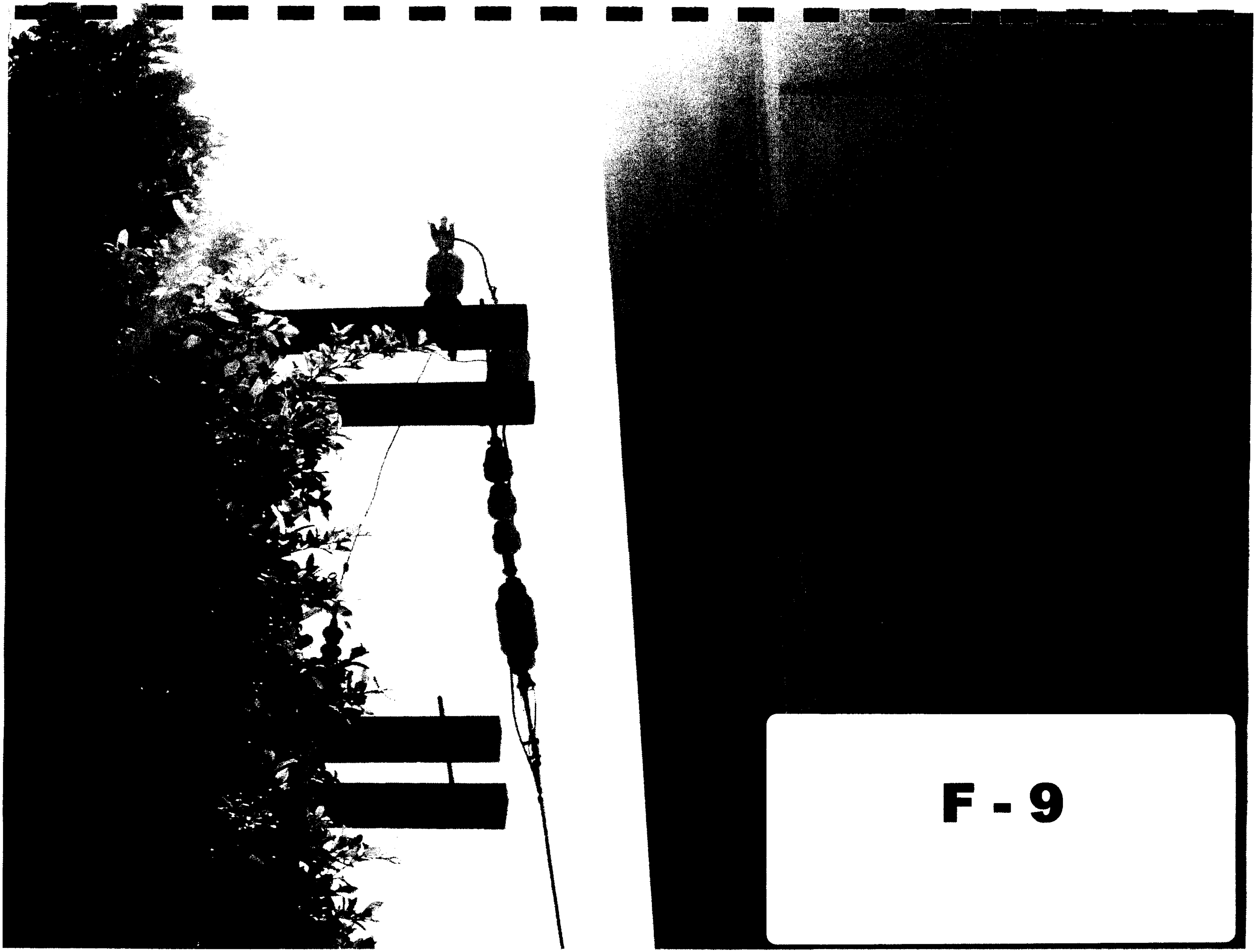

F - 5


F - 6

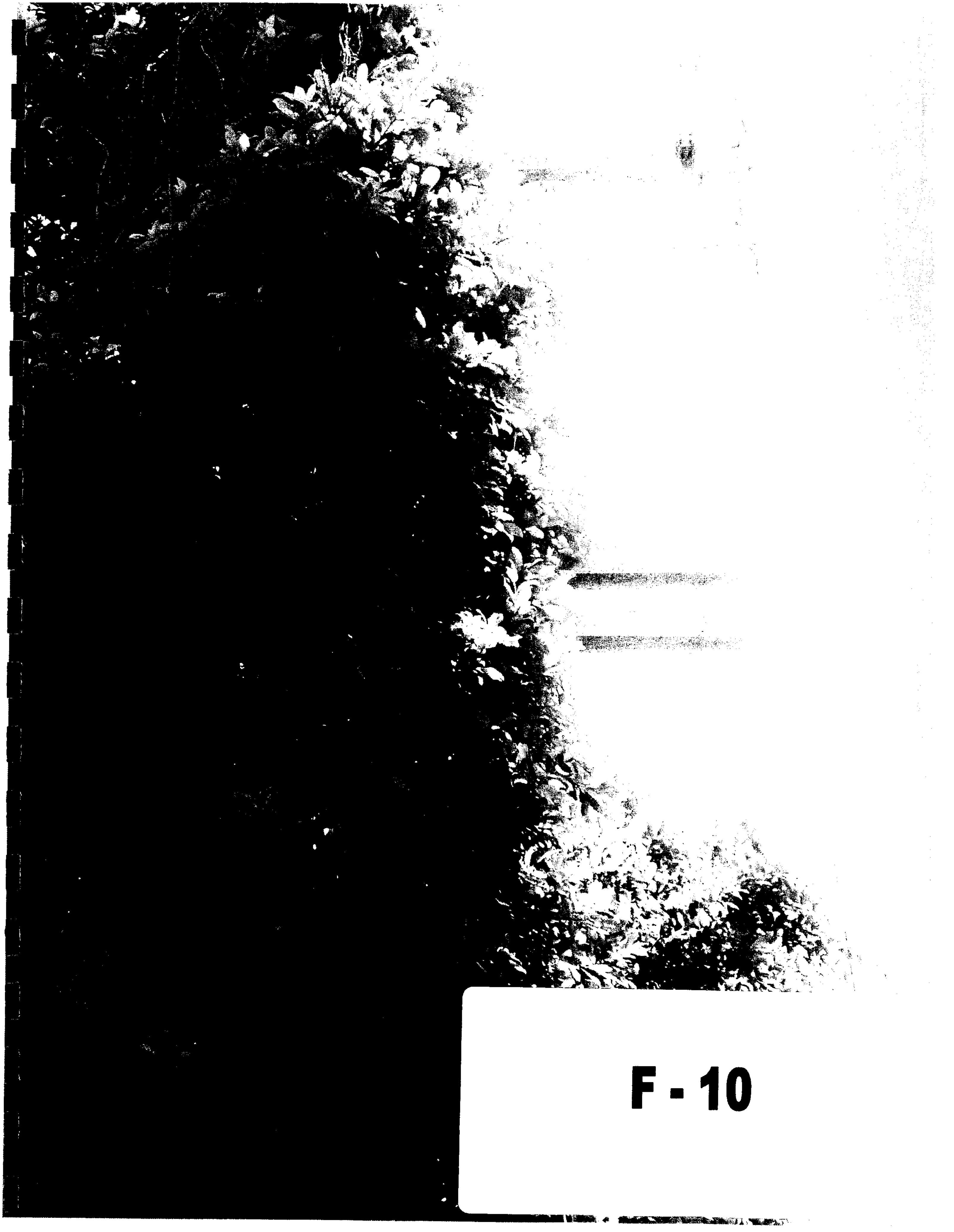


F - 7

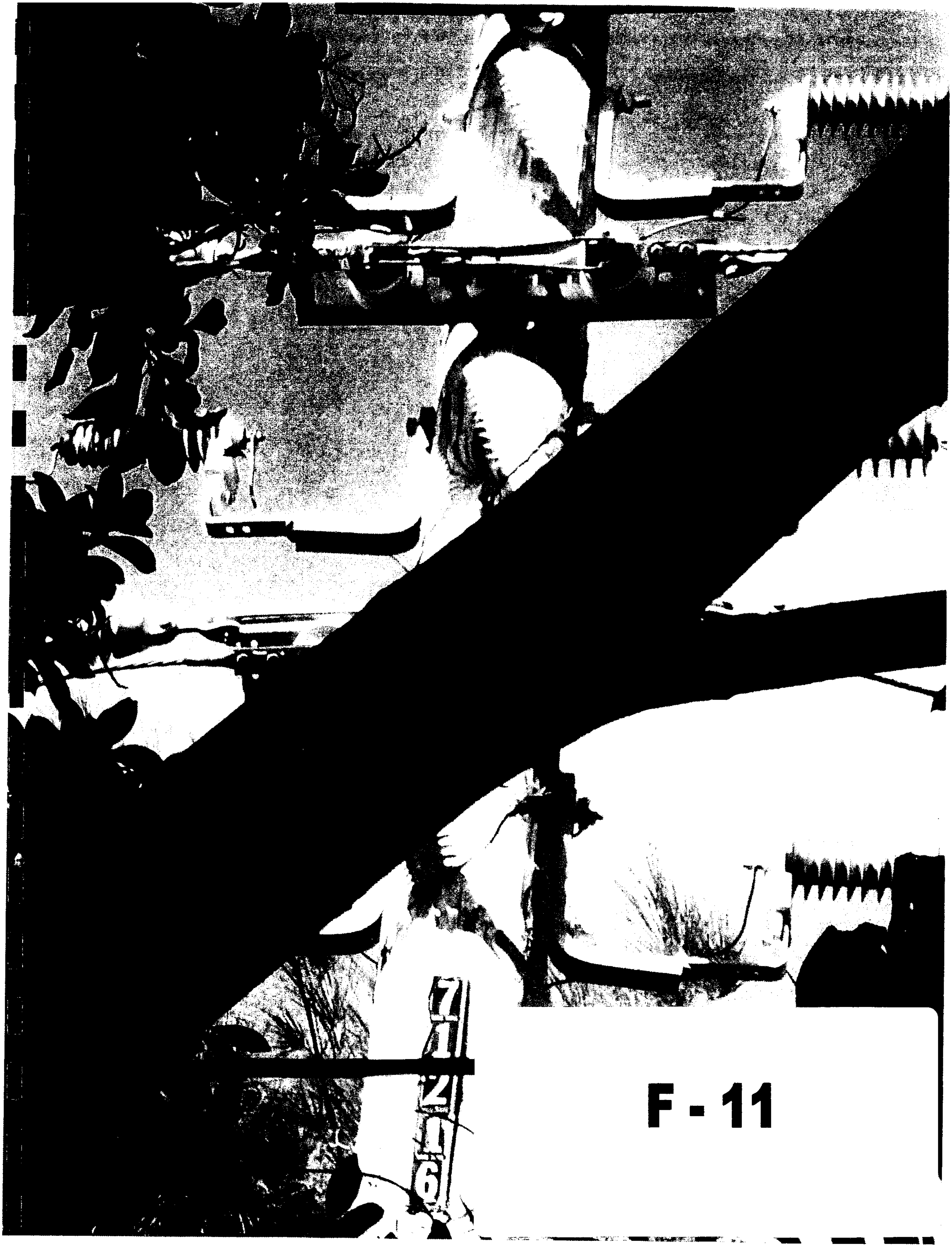
F - 8



F - 9



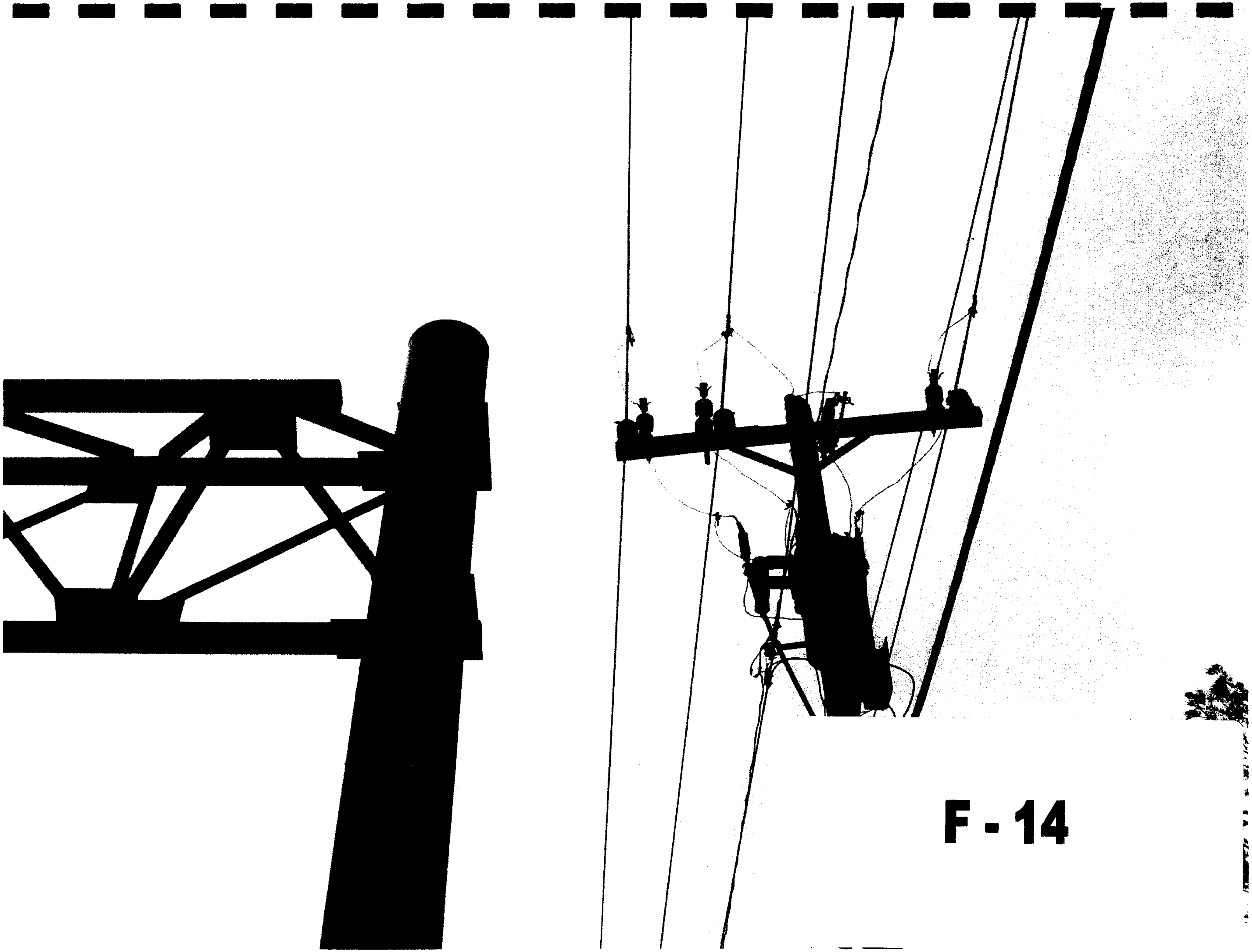
F - 10



F - 11

F - 12

F - 13

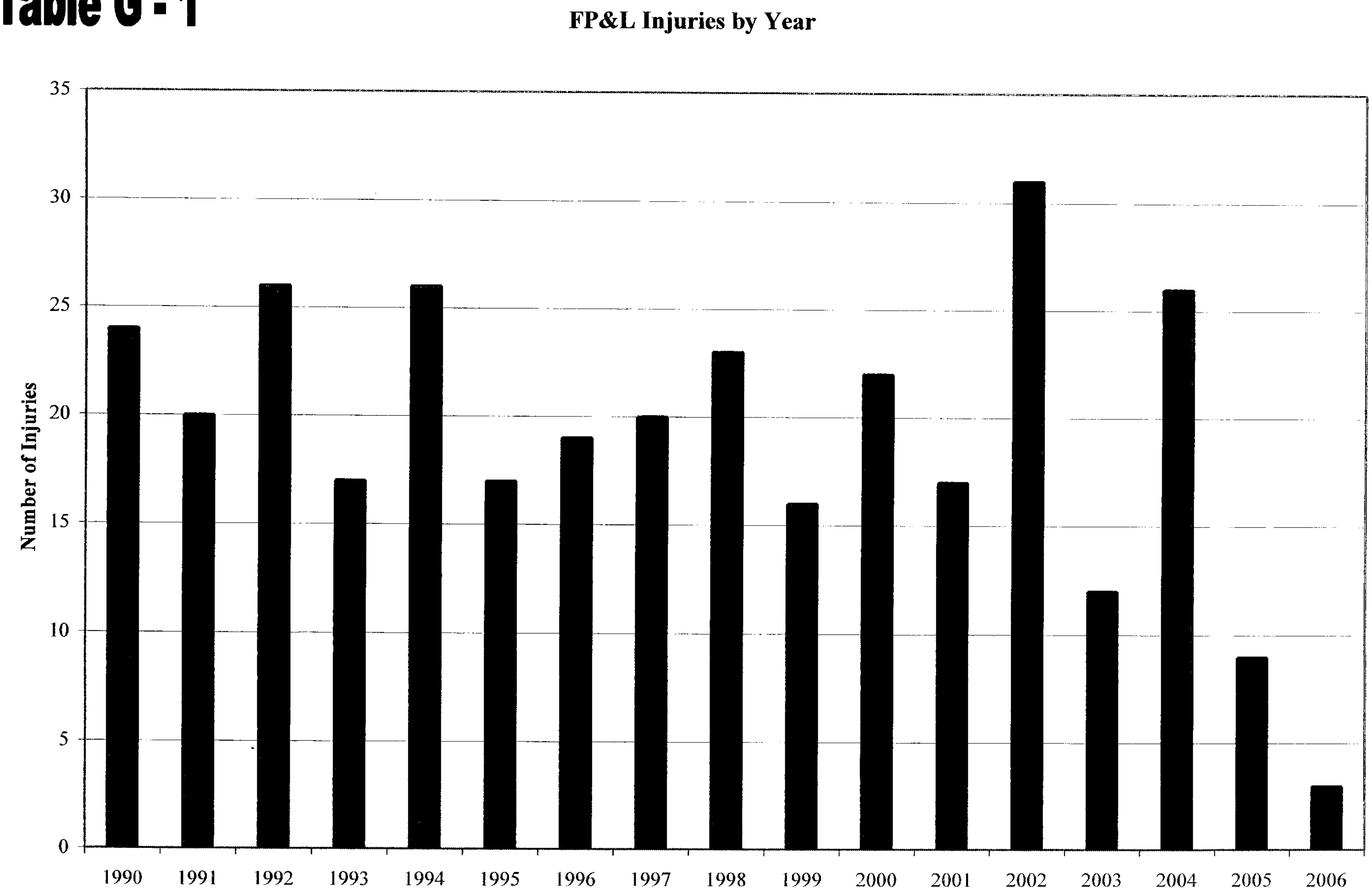


F - 14

APPENDIX G

FATALITIES / ACCIDENTS - FPL

Table G - 1



FP&L Injuries by Year
Number of Injuries
35
30
25
20
15
10
5
0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006

Table G - 2

FP&L Fatalities by Year

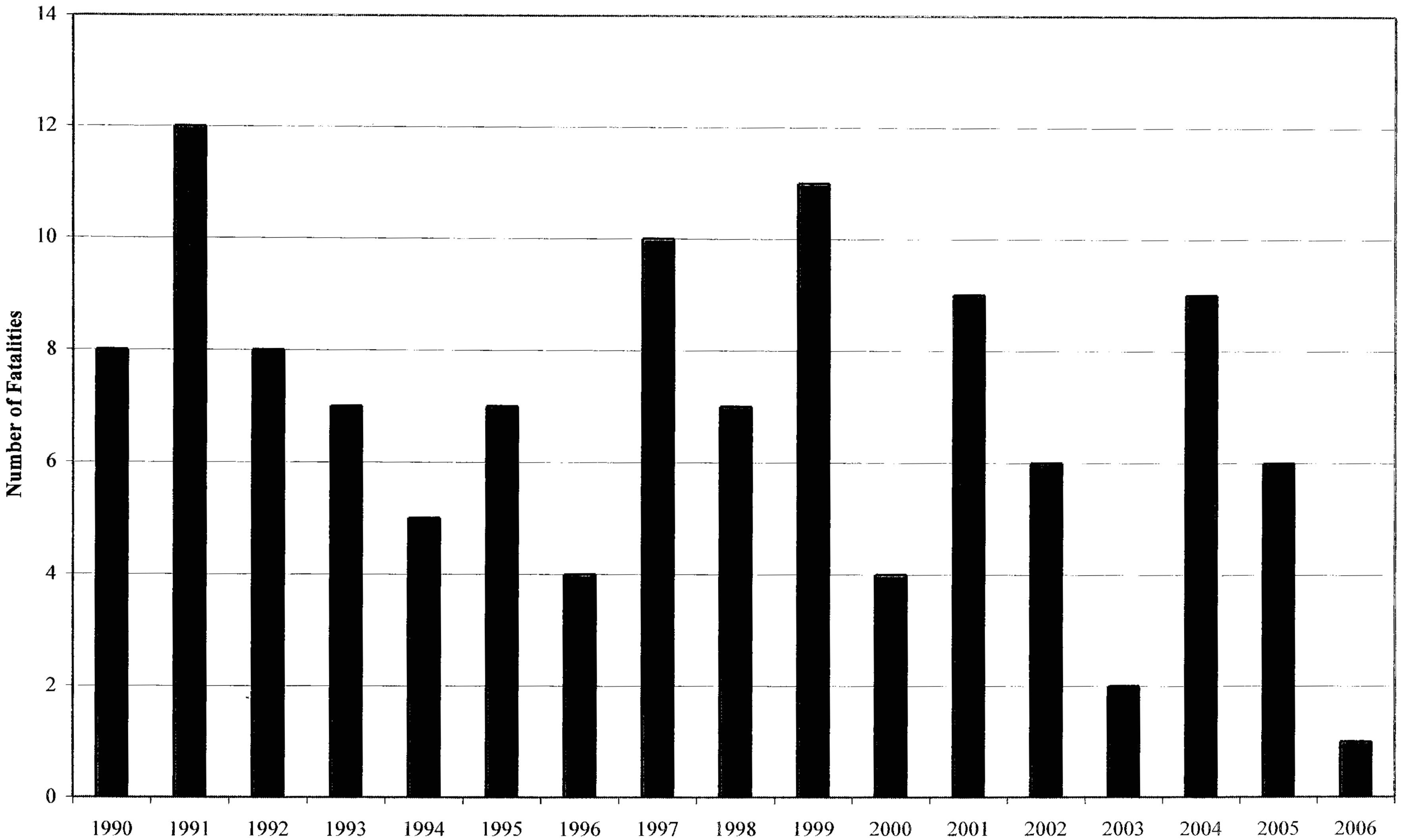
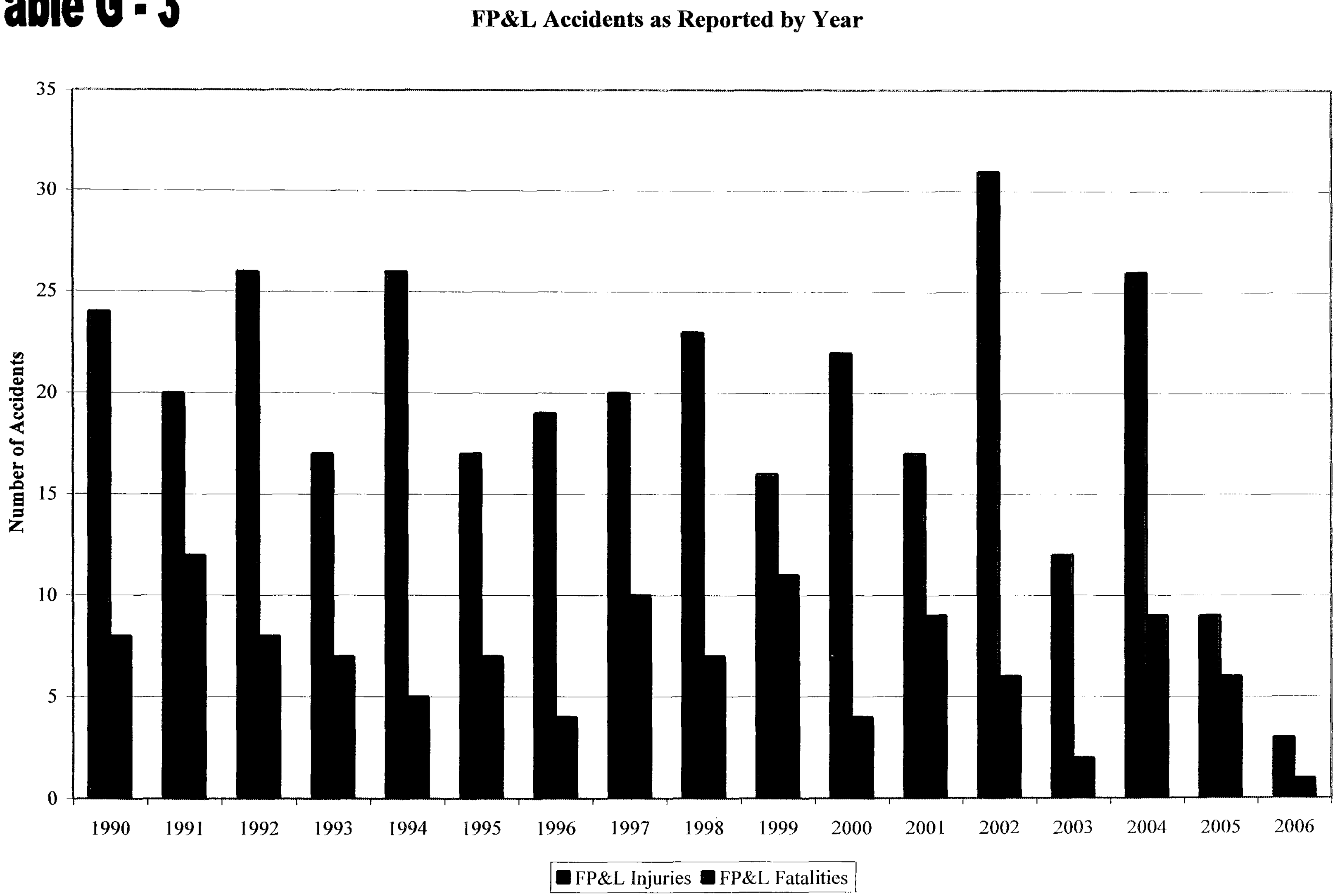


Table G - 3


FP&L Accidents as Reported by Year
Number of Accidents
35
30
25
20
15
10
5
0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
FP&L Injuries
FP&L Fatalities

APPENDIX H

REPRESENTATIVE SETTLEMENTS OR AWARDS / ACCIDENT CASES

Table H - 1

REPRESENTATIVE SETTLEMENTS OR AWARDS / ACCIDENT CASES

CASE NUMBER*	YEAR	SETTLEMENT OR AWARD AMOUNTS
1	1998	$ 2,200,000
2	2000	$ 3,500,000
3	2000	$ 3,500,000
4	2000	$ 5,000,000
5	2001	$ 3,500,000
6	2001	$ 4,000,000
7	2003	$ 5,000,000
8	2003	$ 500,000
9	2003	$ 1,200,000
10	2003	$ 20,000,000
11	2004	$ 2,000,000
12	2004	$ 2,100,000
13	2004	$ 3,500,000
14	2005	$ 1,500,000
15	2005	$ 3,100,000
16	2005	$ 6,000,000
17	2005	$ 8,000,000

* Cases in which Gregory L. Booth, PE worked as an expert.

APPENDIX I

PPI INDICES
PRESENT VALUE ANALYSIS

Table I - 1

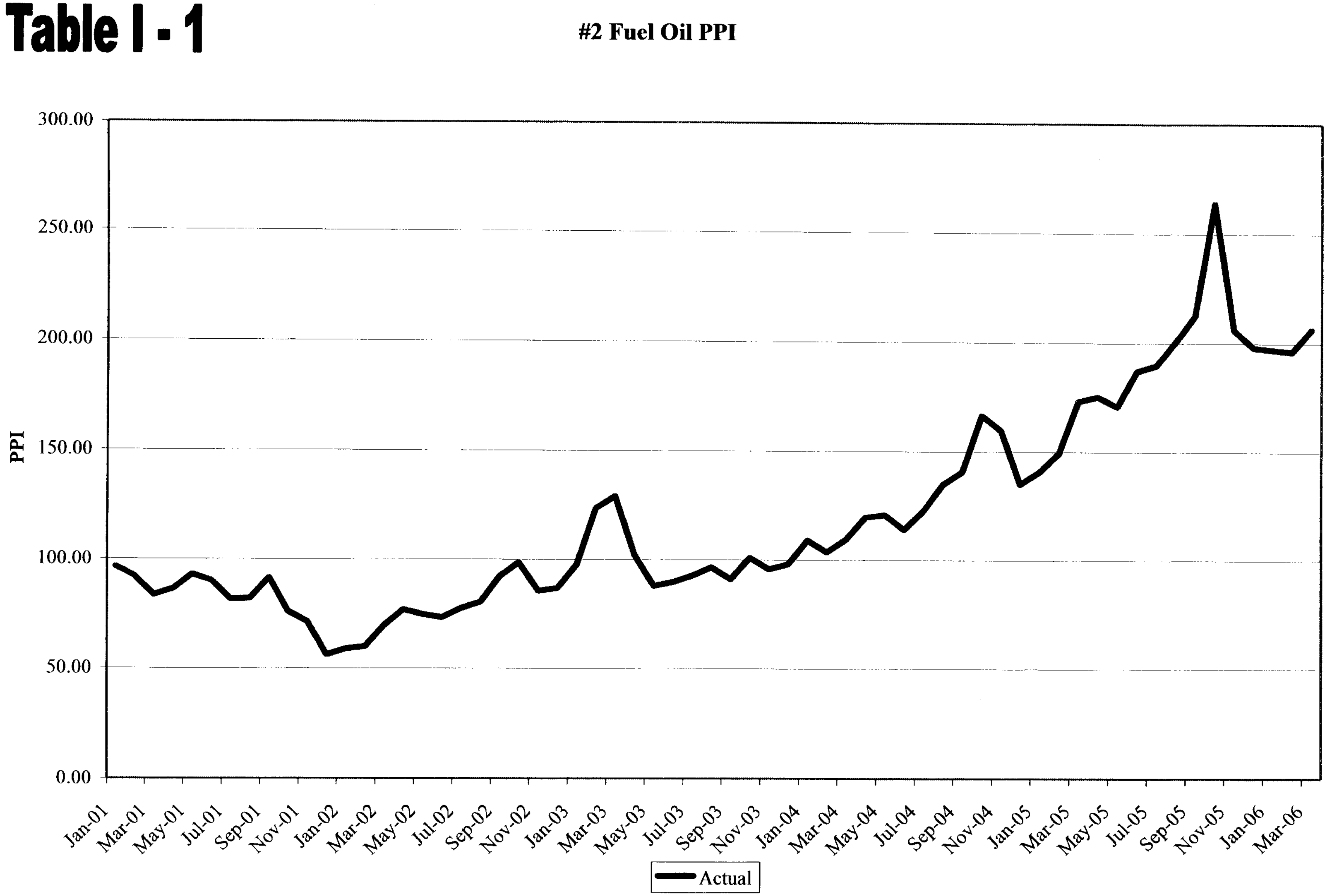

#2 Fuel Oil PPI
300.00
250.00
200.00
150.00
100.00
50.00
0.00
PPI
Jan-01
Mar-01
May-01
Jul-01
Sep-01
Nov-01
Jan-02
Mar-02
May-02
Jul-02
Sep-02
Nov-02
Jan-03
Mar-03
May-03
Jul-03
Sep-03
Nov-03
Jan-04
Mar-04
May-04
Jul-04
Sep-04
Nov-04
Jan-05
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06
Actual

Table I - 2

12-Month Rolling Average of #2 Fuel PPI

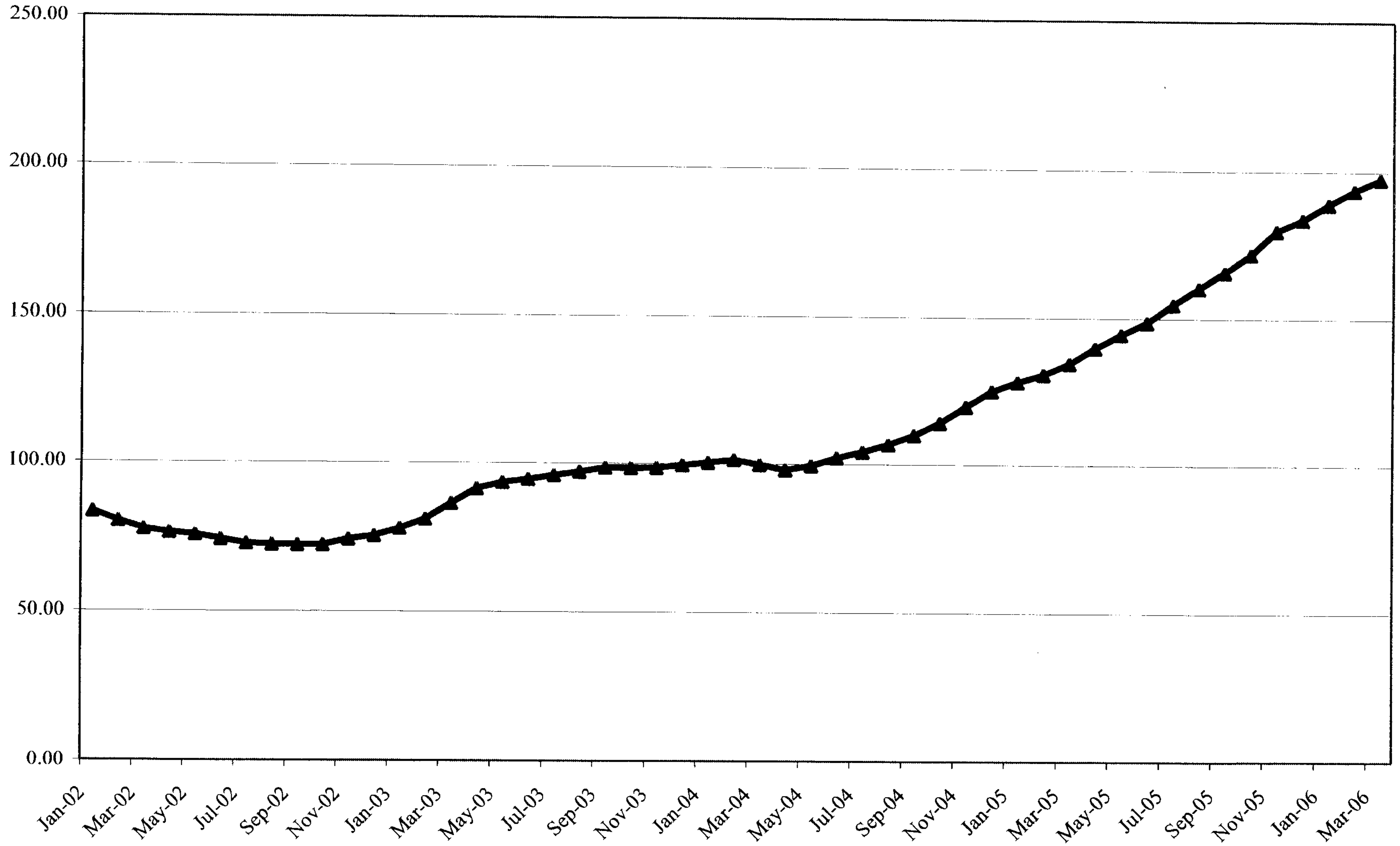
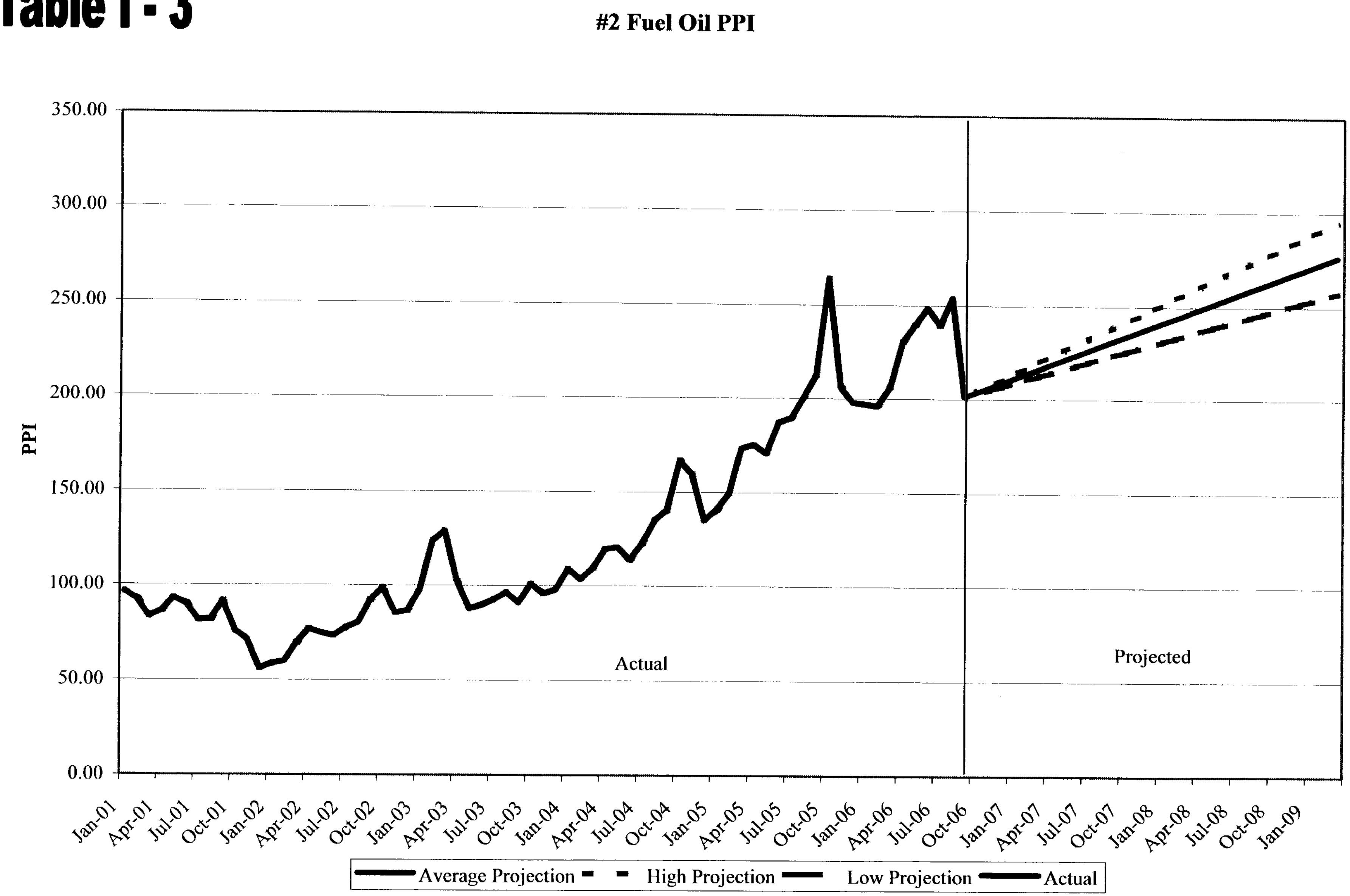


Table I - 3



#2 Fuel Oil PPI
PPI
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
Actual
Projected
Jan-01
Apr-01
Jul-01
Oct-01
Jan-02
Apr-02
Jul-02
Oct-02
Jan-03
Apr-03
Jul-03
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jan-05
Apr-05
Jul-05
Oct-05
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Average Projection
High Projection
Low Projection
Actual

Table I - 4

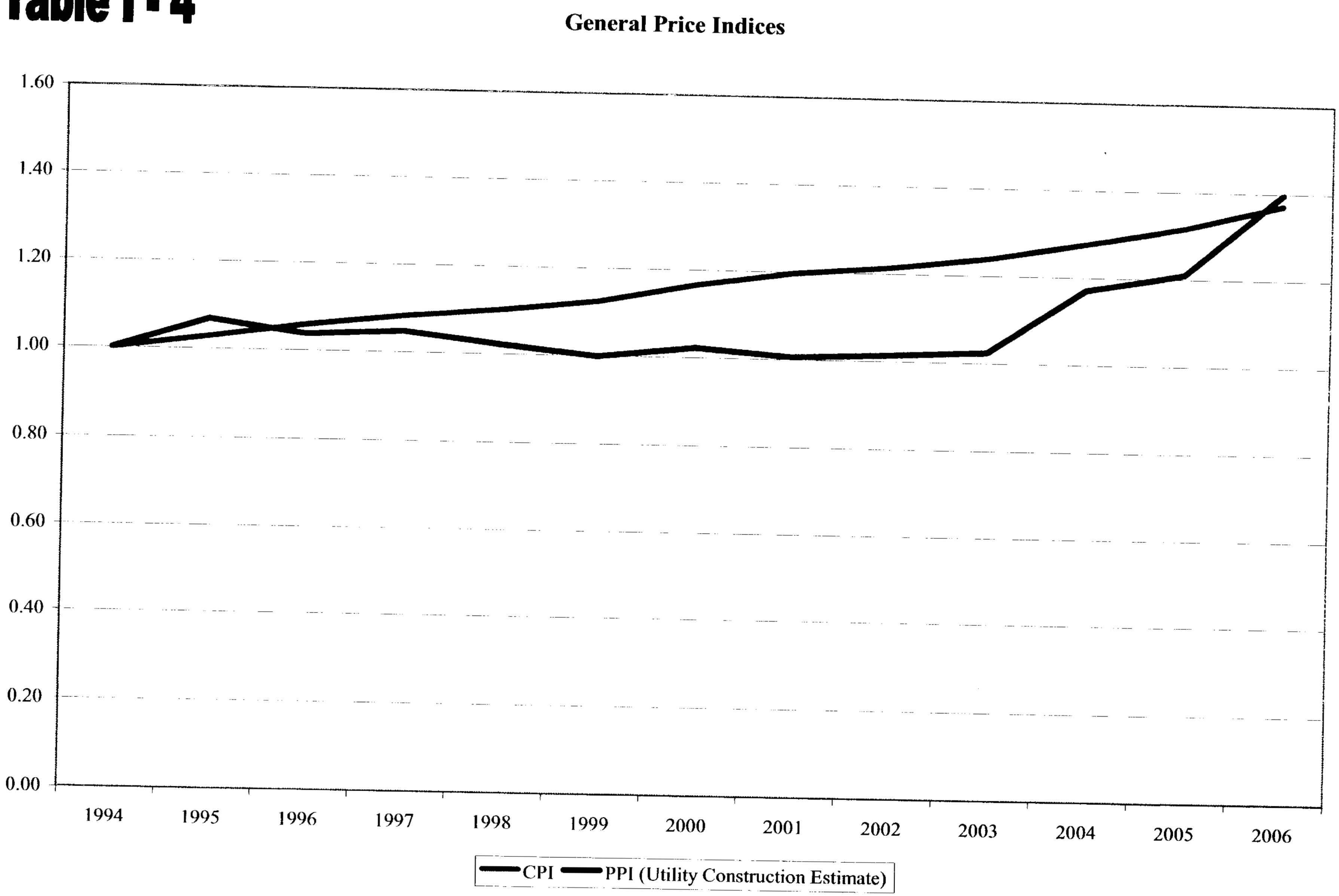

General Price Indices
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
CPI
PPI (Utility Construction Estimate)

Table I - 5

MonthlyMetals PPI

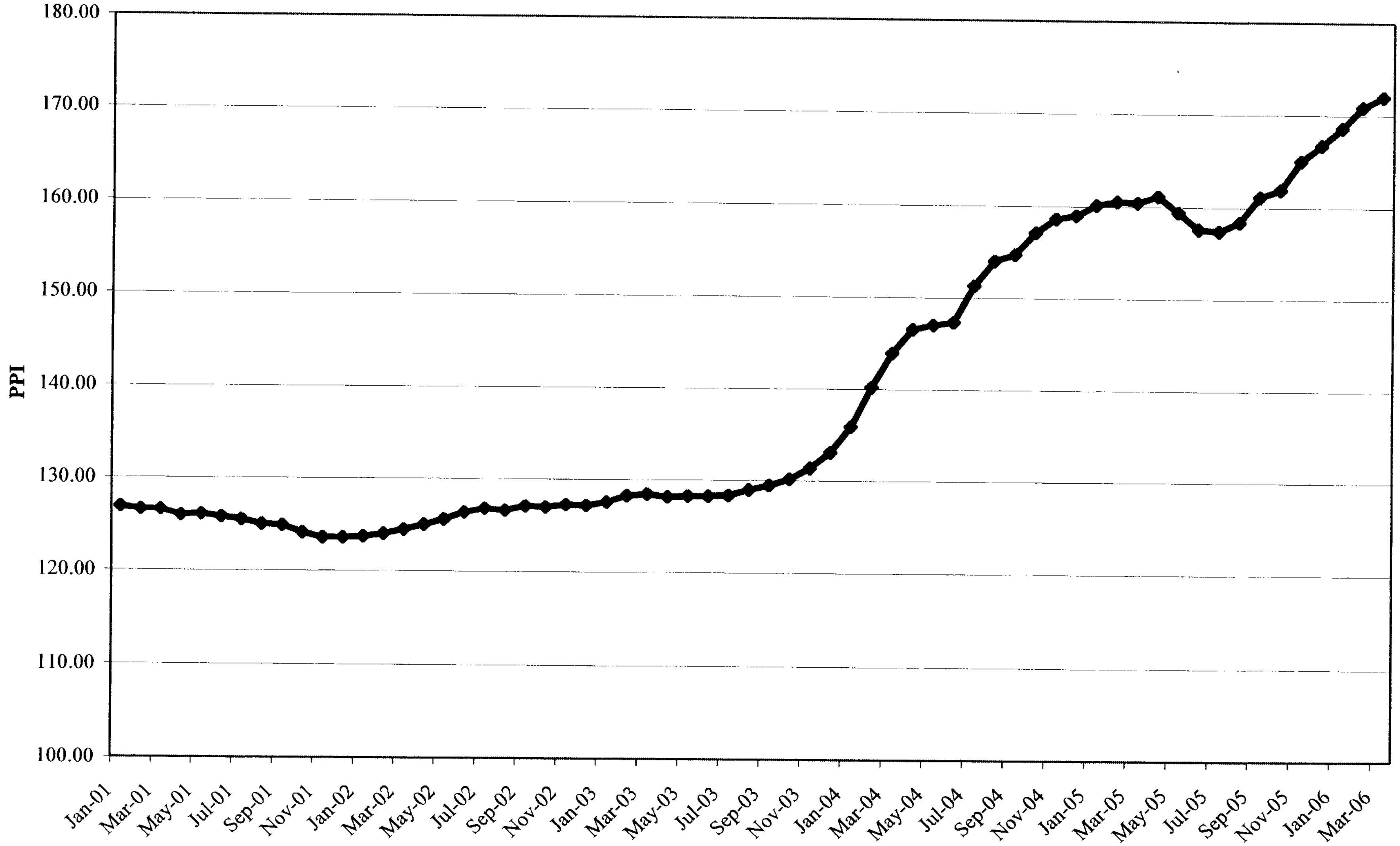
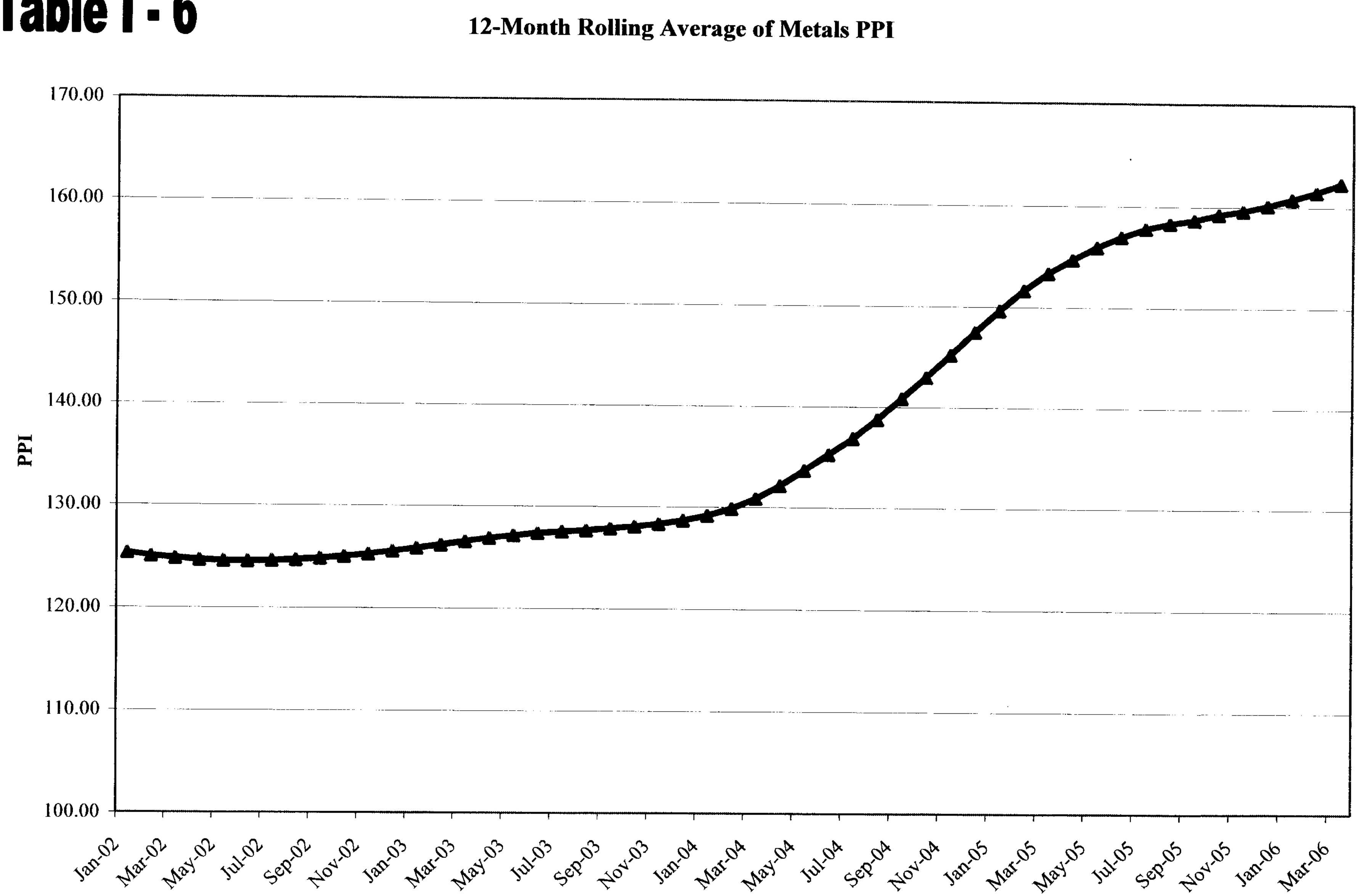


Table I - 6



12-Month Rolling Average of Metals PPI
PPI
170.00
160.00
150.00
140.00
130.00
120.00
110.00
100.00
Jan-02
Mar-02
May-02
Jul-02
Sep-02
Nov-02
Jan-03
Mar-03
May-03
Jul-03
Sep-03
Nov-03
Jan-04
Mar-04
May-04
Jul-04
Sep-04
Nov-04
Jan-05
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06

Table I - 7

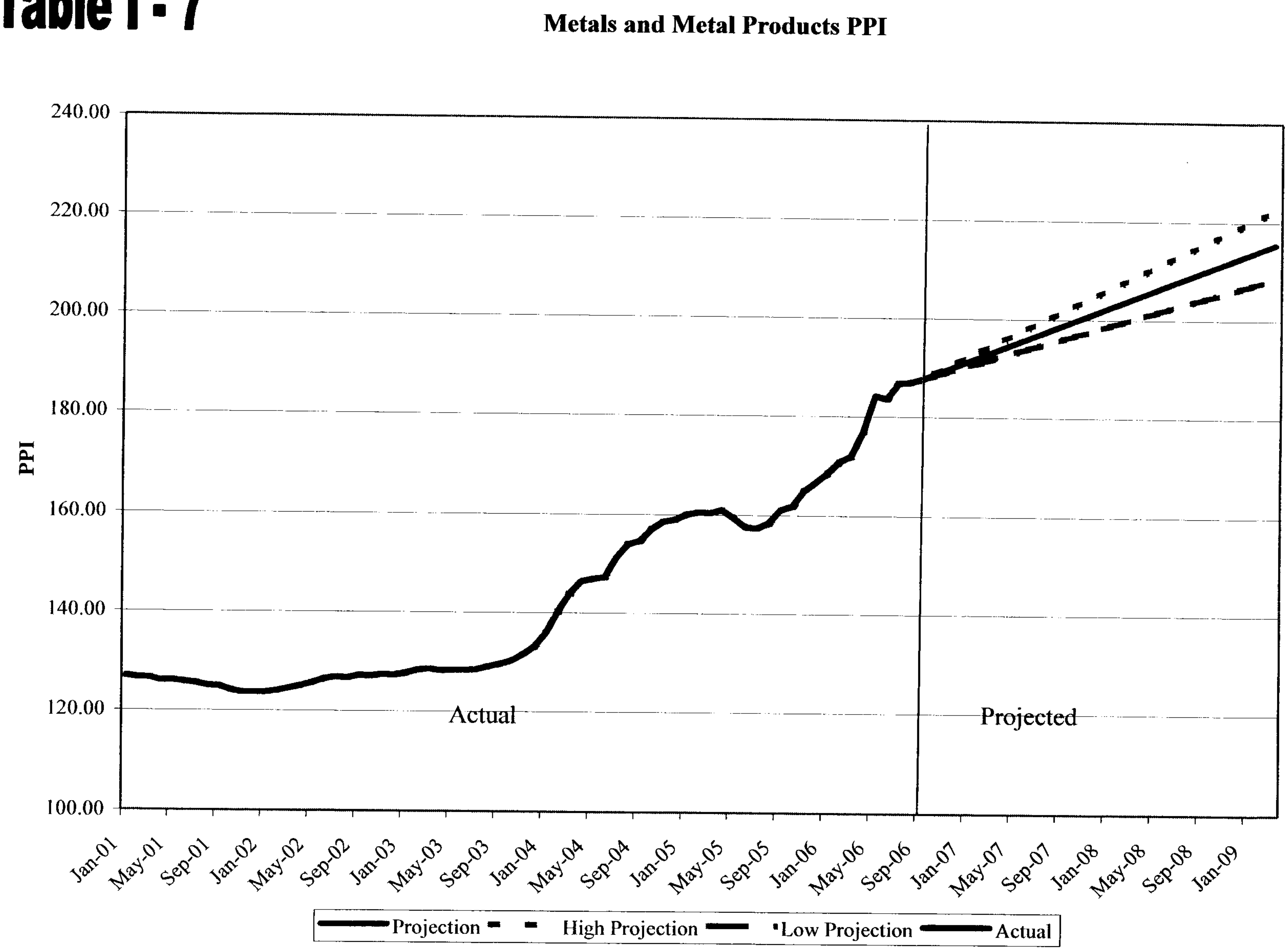

Metals and Metal Products PPI
240.00
220.00
200.00
180.00
160.00
140.00
120.00
100.00
PPI
Actual
Projected
Jan-01
May-01
Sep-01
Jan-02
May-02
Sep-02
Jan-03
May-03
Sep-03
Jan-04
May-04
Sep-04
Jan-05
May-05
Sep-05
Jan-06
May-06
Sep-06
Jan-07
May-07
Sep-07
Jan-08
May-08
Sep-08
Jan-09
Projection
High Projection
Low Projection
Actual

Table I - 8

Present Value Analysis
Overhead to Underground Conversion Adjustments to CIAC

Event	Annual $/mile estimate	Escalation Rate	Discount Rate	Discounted Escalation Multiplier (30 Years)	Discounted PV
Outage Restoration Reduction -- Major Events	$6,593	8.40%	8.37%	30.94	$203,987
Outage Restoration Reduction -- Non-major events	$1,559	6.45%	8.37%	24.34	$37,946
Reduced Revenue Loss -- Major Events	$681	2.30%	8.37%	14.69	$10,004
Reduced Revenue Loss -- Non-major events	$37	2.30%	8.37%	14.69	$544
Reduced O&M Costs -- Vegetation Management	$2,494	7.60%	8.37%	27.59	$68,809
Reduced O&M Cost -- Other O&M	$332	6.45%	8.37%	24.34	$8,081
Cost of UG Locates	($218)	2.30%	8.37%	20.49	($4,467)
Loss of Pole Attachment Revenue	($310)	2.30%	8.37%	14.69	($4,554)
Litigation	$2,903	10.00%	8.37%	37.56	$109,037
				Total	$429,387

Discounted Escalation Multiplier
Applies to Annual $/Mile to Yield 30 Year PV

Power
Management Services For Utilities®

2004, 2005 & 2006 Assumption Comparisons

2004	2005	2006	Basic assumptions:
0	300	300	System line miles increase
4,026,744	4,124,608	4,251,300	Customer base
			Constant current year dollars
0%	5%	5%	Contract labor rate adjustment for corrective maintenance
0%	7%	5%	Contract labor rate adjustment for preventative maintenance
0%	80%	80%	Percentage of overall rate increase attributable to labor

2004	2005	2006	Reliability assumptions:
75%	75%	75%	Reduction in preventable (020) lateral interruptions achieved incrementally each year of first cycle.
20%	20%	20%	Reduction in non-preventable (021) lateral interruptions achieved incrementally each year of first cycle.
20%	20%	0%	Reduction in preventable (020) feeder interruptions from mid-cycle feeder maintenance funded from hot-spot trim budget.
0%	4%	4%	Reactive Lateral Savings percent
	0.20	0.20	Feeder CI Savings degradation Factor
	0.03	0.50	Lateral CI Savings degradation Factor

2004	2005	2006	Cost assumptions:
0%	0%	5%	Incremental percent inflation assumed after 2005.
20%	10%	0%	Contractor productivity improvement due to performance-based contract, organization and operational process changes.
75%	75%	75%	Reduction in corrective maintenance workload achieved incrementally each year of first lateral cycle.
$1.31	$1.31	$1.31	:$1.00 is the ratio/cost comparison of trimming deferred maintenance on laterals vs. "on-cycle" trimming cost.
$102	$102	$102	per trouble ticket - distribution operations cost

Natalie F. Smith
Principal Attorney
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408-0420
(561) 691-7207
(561) 691-7135 (Facsimile)

May 19, 2006

VIA HAND DELIVERY
Ms. Blanca S. Bayò, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard, Room 110
Tallahassee, FL 32399-0850

060408-EI

Re: Petition for Approval of Modifications to Florida Power & Light Company's Demand Side Management Plan

Dear Ms. Bayò:

Enclosed for filing on behalf of Florida Power & Light Company ("FPL") are the original and fifteen (15) copies of a Petition for Approval of Modifications to its Demand Side Management Plan. Also included is a computer diskette containing an electronic version of FPL's Petition.

Please do not hesitate to contact me should you or your Staff have any questions regarding this filing. Thanking you for your attention to this matter.

Sincerely,

Natalie F. Smith

NFS:ec
Enclosures

Original Tariff forwarded to ECR

DOCUMENT NO.
04421-06
5.19.06

an FPL Group company

PETITION FOR APPROVAL OF MODIFICATIONS TO FLORIDA POWER & LIGHT COMPANY'S DEMAND SIDE MANAGEMENT PLAN

Florida Power & Light Company ("FPL"), pursuant to Sections 366.82 and 366.06(1), Florida Statutes (2006), and Florida Administrative Code Rule 25-17.0021 petitions the Florida Public Service Commission ("Commission") to approve certain Modifications to FPL's Demand Side Management ("DSM") Plan as described in this petition, and to authorize FPL to recover through its Energy Conservation Cost Recovery ("ECCR") clause reasonable and prudent expenditures associated with implementation of such modifications to FPL's DSM Plan. Approval of the modifications to FPL's DSM Plan, as proposed, will help further the objectives of the Florida Energy Efficiency Conservation Act ("FEECA") by cost-effectively reducing the growth rate of weather sensitive peak demand, reducing and controlling the growth rate of energy consumption, increasing the conservation of expensive resources and increasing the efficiency of the electrical system. See Section 366.81, Florida Statutes (2006); Rule 25-17.001(2), Florida Administrative Code (2006). Reducing the growth rate of weather sensitive peak demand will benefit not only FPL's individual customers who reduce their demand through participation in the new and modified DSM programs, but also all other customers on FPL's system. See Rule 25-17.001(3), Florida Administrative Code. FPL respectfully requests expedited consideration and approval of modifications to its DSM Plan in order that customers

INPUT DATA -- PART 1 CONTINUED
PROGRAM METHOD SELECTED: REV_REQ
PROGRAM NAME: Commercial/Industrial Building Envelope

I. PROGRAM DEMAND SAVINGS & LINE LOSSES

	(1) CUSTOMER kW REDUCTION AT METER	0.85	kW
	(2) GENERATOR kW REDUCTION PER CUSTOMER	1.14	kW
	(3) kW LINE LOSS PERCENTAGE	9.03	%
	(4) GENERATOR kWh REDUCTION PER CUSTOMER	2,170.05	kWh
	(5) kWh LINE LOSS PERCENTAGE	7.16	%
	(6) GROUP LINE LOSS MULTIPLIER	1.02	
	(7) CUSTOMER kWh INCREASE AT METER	0.00	kWh

II. ECONOMIC LIFE & K FACTORS

	(1) STUDY PERIOD FOR THE CONSERVATION PROGRAM	26	YEARS
	(2) GENERATOR ECONOMIC LIFE	25	YEARS
	(3) T&D ECONOMIC LIFE	35	YEARS
	(4) K FACTOR FOR GENERATION	1.65312	
	(5) K FACTOR FOR T & D	1.61194	

III. UTILITY & CUSTOMER COSTS

	(1) UTILITY NON RECURRING COST PER CUSTOMER	***	$/CUST
	(2) UTILITY RECURRING COST PER CUSTOMER	***	$/CUST
	(3) UTILITY COST ESCALATION RATE	***	%**
	(4) CUSTOMER EQUIPMENT COST	***	$/CUST
	(5) CUSTOMER EQUIPMENT ESCALATION RATE	***	%**
	(6) CUSTOMER O & M COST	***	$/CUST/YR
	(7) CUSTOMER O & M COST ESCALATION RATE	***	%**
*	(8) INCREASED SUPPLY COSTS	***	$/CUST/YR
*	(9) SUPPLY COSTS ESCALATION RATES	***	%**
*	(10) UTILITY DISCOUNT RATE	8.37	%
*	(11) UTILITY AFUDC RATE	7.84	%
*	(12) UTILITY NON RECURRING REBATE/INCENTIVE	***	$/CUST
*	(13) UTILITY RECURRING REBATE/INCENTIVE	***	$/CUST
*	(14) UTILITY REBATE/INCENTIVE ESCALATION RATE	***	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK
** VALUE SHOWN IS FOR FIRST YEAR ONLY (VALUE VARIES OVER TIME)
*** PROGRAM COST CALCULATION VALUES ARE SHOWN ON PAGE 2

IV. AVOIDED GENERATOR AND T&D COSTS

(1) BASE YEAR		
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UN		
(3) IN-SERVICE YEAR FOR AVOIDED T&D		
(4) BASE YEAR AVOIDED GENERATING COST		
(5) BASE YEAR AVOIDED TRANSMISSION COST	147.00	$/kW
(6) BASE YEAR DISTRIBUTION COST	17.27	$/kW
(7) GEN, TRAN & DIST COST ESCALATION RATE	3.00	%**
(8) GENERATOR FIXED O & M COST	30.93	$/kW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	4.35	%**
(10) TRANSMISSION FIXED O & M COST	2.68	$/kW
(11) DISTRIBUTION FIXED O & M COST	0.95	$/kW
(12) T&D FIXED O&M ESCALATION RATE	4.35	%**
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.082	CENTS/kWh
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	1.99	%**
(15) GENERATOR CAPACITY FACTOR	4%	** (In-service year)
(16) AVOIDED GENERATING UNIT FUEL COST	6.32	CENTS PER kWh** (In-service year)
(17) AVOIDED GEN UNIT FUEL COST ESCALATION RATE	4.44	%**

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON FUEL COST IN CUSTOMER BILL	***	CENTS/kWh
(2) NON-FUEL COST ESCALATION RATE	***	%
(3) DEMAND CHARGE IN CUSTOMER BILL	***	$/kW/MO
(4) DEMAND CHARGE ESCALATION RATE	***	%

APPENDIX J

ANNOTATED BIBLIOGRAPHY OF SELECTED REFERENCES - EXPECTED UNSERVED ENERGY ANALYSES

J - 1

ANNOTATED BIBLIOGRAPHY OF SELECTED REFERENCES - EXPECTED UNSERVED ENERGY ANALYSES

Rose, Judah, and Mann, Charles, "Unbundling the Electric Capacity Price in a Deregulated Commodity Market," in Public Utilities Fortnightly (December 1, 1995). ("A recent survey of utilities that we conducted revealed that on average, utilities estimated that customers would pay $12 (not cents, but dollars) per kilowatt-hour on average to avoid being blacked out.")

McCusker, S.A. and J.S. Siegel, Value of Distributed Energy Options for Congested Transmission/Distribution Systems in the Southeastern United States: Mississippi and Florida Case Studies, National Renewable Energy Laboratory (2002). (EUE value of $2,000 per MWH, or $2.00 per kWh.)

WSCC Power Supply Design Criteria Survey, Western Systems Coordinating Council (undated) ("The California Public Utilities Commission has used a value of $15/kWh of unserved energy and $15/outage/customer in past evaluations of the cost-effectiveness of proposed reliability enhancements.)

Violette, D.M., Freeman, R., and C. Neil, DRR Valuation and Market Analysis, Volume II: Assessing the DRR Benefits and Costs, *prepared for* International Energy Agency (2006). ("The range of VOLL [Value of Lost Load] is large, from zero to over $100/kWh. Several real-time pricing programs in the U.S. have assumed a VOLL of $3.00-$5.00/kWh to set the capacity rationing component of hourly commodity prices. [Footnote omitted] Recently, PJM Interconnection proposed a capacity market design predicated on a VOLL of almost $20/kWh. The method adopted by ISO-NE and NYISO to value their demand response programs, which has been endorsed by FERC, uses a VOLL between $2.50-$5.00/kWh. [Footnote omitted]")

ABB, LOLE/Resource Adequacy Methodology, New England Installed Capacity Requirement Stakeholder Meeting (2005). (PowerPoint presentation) (Outage costs assumed between $3/kWh and $12/kWh.)

Lee, Stephen T. (EPRI), Comparison of a Competitive Wholesale Power Market with Alternative Structures through a Long Term power Market Simulation, Working Paper for the California Energy Commission Workshop on Exploring Alternative Wholesale Electricity Market Structures for California (2001). ("The cost to the society of these blackouts is assumed to be $100,000 per MWh of unserved energy."

J - 2

ANNOTATED BIBLIOGRAPHY OF SELECTED REFERENCES - EXPECTED UNSERVED ENERGY ANALYSES (CONTINUED)

Energy and Environmental Economics, Inc., Renewable Distributed Generation Assessment: Alameda Power and Telecom Case Study, *prepared for* California Energy Commission (2005). (At page 124, a graphic shows ranges of EUE values from a literature review. The ranges were approximately $0.75 to $12.00/kWh for residential customers, approximately $5.00 to $90.00/kWh for commercial customers, and approximately $0.90 to $20.00/kWh for industrial customers.)

PacifiCorp, IRP Public Input Meeting (PowerPoint presentation) (2004). ("EUE costs from EPRI study ranged from $5,210/MWh [$5.21/kWh] to $44,910/MWh [$44.91/kWh]." A weighted value of $24.00/kWh was shown in a graphic on page 38 of the presentation.)

Moslehi, K., Kumar, A.B., and Hirsch, P., Valuating Infrastructure for a Self-Healing Grid, (2006) (sponsored by EPRI and in part by TVA). (At page 8, tables show an EUE value of $24.00 per kWh.)

Camfield, R., Assessment of Other Factors, ATC's Access Initiative, Christensen Assoc. Energy Consulting, LLC (2005). (PowerPoint presentation) (A table on page 12 reflects benefits from reduced EUE valued at $10.25 per kWh.)

Camfield, R.J. Kirsch, L.D., Morey, M.J., and Welsh, M., Assessment of Other Factors: Benefit-Cost Analysis of Transmission Expansion Plans, prepared for American Transmission Company (2005). (This report includes information based on a literature survey on the costs of unserved energy. The information presented shows the following ranges for the cost of unserved energy for different types of customers: Residential: 17th percentile - $0.30/kWh to 83rd percentile - $7.67/kWh; Commercial: 17th percentile - $0.12/kWh to 83rd percentile - $27.44/kWh; and Industrial – 17th percentile - $0.39/kWh to 83rd percentile - $24.67/kWh. The information also shows median values for the cost of unserved energy for different types of customers as follows: Residential - $2.28/kWh, Commercial - $16.36/kWh, and Industrial - $8.48/kWh.)

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