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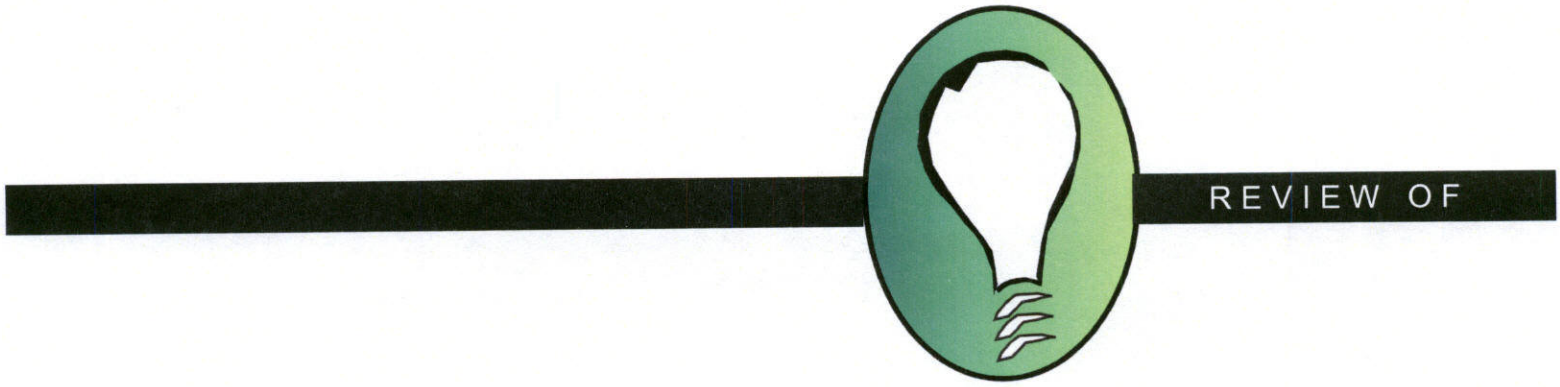

Florida Power & Light's Quality Assurance Process

FOR

Distribution Construction

By Authority of
The State of Florida
Public Service Commission
Division of Regulatory Compliance
Bureau of Performance Analysis

Review of

Florida Power & Light's Quality Assurance Process for Distribution Construction

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December 2008

By Authority of
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Bureau of Performance Analysis

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1.0 Executive Summary

1.1 Objectives

At the request of the Florida Public Service Commission's (the Commission) Division of Service, Safety and Consumer Assistance, the Division of Regulatory Compliance conducted a review of Florida Power & Light's (FP&L) quality control processes for its distribution construction projects. The objective of the review was to document and assess how FP&L monitors and evaluates its distribution construction project quality control and safety inspection.

The primary objectives of this review were to determine whether:

- Adequate operating policies and procedures are in place to limit the risk associated with constructing distribution facilities which are not in compliance with all applicable requirements.
- Adequate monitoring of the electric distribution construction processes exist to verify compliance with all applicable federal, state, local regulations, National Electric Safety Code, and other industry standards.

1.2 Scope

Audit staff's review examines FP&L's current policies, procedures, practices, and operational controls for monitoring its electric distribution construction processes to ensure compliance with all applicable requirements. The review involved gaining an understanding of FP&L's quality control and safety inspection procedures for its employees and contractors and evaluating the effectiveness and adherence to such procedures.

The sections of audit staff's review are focused on the following components of FP&L Construction Quality Control:

- Internal goals and objectives
- Internal practices and procedures
- Internal controls and monitoring

Within these areas, audit staff evaluated the company's practices for both its internal construction staff and its contractors.

1.3 Methodology

Audit staff prepared its review based on an analysis of company responses to document requests, on-site interviews with key personnel, and teleconferences with utility representatives. Specific information collected included company policies and procedures, organization charts, management reports, and training material. The electric safety engineers at the Commission's

district office in Miami provided information through a joint inspection of various FP&L distribution construction facilities.

1.4 Background and Perspective

Pursuant to Section 366.04(6), F.S., the Commission has the exclusive jurisdiction over prescribing and enforcing safety standards for distribution and transmission facilities of Florida's electric utilities, including municipal and cooperative utilities. Commission Rule 25-6.0345(2), F.A.C., requires that each electric investor-owned utility, municipal utility, and electric cooperative file with the Commission a listing of each completed construction work order completed by the company each quarter.

The Commission's Bureau of Safety periodically selects a sample of these work orders for the Commission to perform an on-site inspection of the completed work. The Commission's electrical safety engineers inspect these facilities and verify that the project is in compliance with all applicable rules and standards, including the National Electric Safety Code. If a variance is identified by the safety inspectors, the Commission will notify the utility for corrective action. A follow-up inspection may be conducted to ensure compliance.

Upon completion of the inspections, the safety engineer records the FPSC Bureau of Safety inspection results into the Commission's E-Safe Program. This program maintains all inspection results for each utility and also tracks the company's progress in correcting identified variances. For the period August 1, 2007 through August 31, 2008, the safety engeneers conducted 1,551 inspections on FP&L facilities, of which 402 had electrical-related variances. Within these 402 inspections, the safety engineers indentified 746 safety point variances out of a potential 21,362[1]. These variances vary in severity, and include issues such as missing guy wire reflector covers, abandoned poles, ground issues, and poorly secured protective conduit.

1.5 Overall Opinion

FP&L uses a combination of company personnel and contractors to perform its distribution construction projects. From August 2007 through August 2008, the company completed 25,370 distribution construction projects; 14,804 (58 percent) were performed by FP&L personnel and 10,566 (42 percent) by contractors. However, in terms of construction man hours, FP&L states that its crews perform approximately 30 percent of the total work while its contractors perform approximately 70 percent of the total work. FP&L manages, monitors, and evaluates its contractors differently from the way it monitors and evaluates its own FP&L work crews performing similar work.

While the majority of its construction projects are completed by company personnel, FP&L places greater emphasis on quality oversight monitoring of its contractors. FP&L has a more developed evaluation program for its contractors and is currently expanding the oversight process of its Contractor Compliance Representatives (CCR) even further to include a

[1] The Commission does not break inspection points out by utility type. Therefore, the 21,362 include variances that could occur with non-electric attachments.

centralized review unit that will provide an additional layer of review. Staff recognizes that the company tends to utilize contractors for larger, more labor intensive projects which may require greater monitoring and oversight. FP&L appears to have more concerns about outside contractors' work quality than it does for FP&L trained crews, resulting in a higher degree of contractor oversight.

In contrast, the company's current quality assurance oversight of its FP&L personnel is encompassed within the production supervisor's and crew foreman's normal job duties. While FP&L states that it may monitor and inspect a construction project at any time, the company does not document or complete an independent assessment of its crews' performance, and no written construction quality inspections or performance evaluations are completed on any of these projects. In addition to its management oversight, FP&L states that it places oversight emphasis (on the front-end) through its exclusive training and certification programs to ensure that all of its employees have the proficiency to construct distribution facilities in accordance with all applicable requirements, National Electric Safety Code, and other industry standards. Staff believes that the work performed by FP&L's personnel is equally subject to safety and reliability concerns and should be monitored and evaluated accordingly.

During the 13-month period August 2007 through August 2008, the Commission's Bureau of Safety engineers identified, during their inspection of previously completed projects, 746 electric safety point variances out of a possible 21,362[2] on projects completed by either contractors or FP&L personnel. These results indicate that the company's oversight processes—its training and management oversight of FP&L personnel and its CCR oversight of contract workers—does not fully ensure that construction projects are being completed to standard. The recently implemented centralized and independent auditing body for contractors may help improve a portion of these variances, while the implementation of a similar process for FP&L personnel would ensure all projects are evaluated under the same scrutiny.

Specifically, staff notes the following findings of FP&L's quality assessment process for its distribution construction program for work performed by both FP&L and contractors:

FP&L Contractor Oversight

- Not all of FP&L Contractor Compliance Representatives meet the company's established requirements of quality inspections and performance evaluations in 2007.

- FP&L requires each Contractor Compliance Representative to complete a monthly performance evaluation on each contractor. Staff cannot ascertain if this requirement is being met because the system does not track the results for this requirement.

- During 2008, FP&L was unable to generate a management report that tracks the number and percentage of quality inspections and performance evaluations completed by each

[2] The Commission does not break inspection points out by utility type. Therefore, the 21,362 include variances that could occur with non-electric attachments

Contractor Compliance Representative for contractor work crews. The last report available to the Commission was January 2008.

FP&L Personnel Oversight

- FP&L does not conduct independent quality assessment evaluations on construction projects completed by FP&L personnel (this is contrary to the quality inspections and performance evaluations that are completed on work performed by contract workers.)

- During late 2007, FP&L discontinued its management report that monitors construction work completed by FP&L personnel. The company currently does not have a consolidated management report that monitors this activity.

2.0 Construction Quality Assurance Process

What work groups are responsible for construction quality assurance and how does the company organize this function?

This function is the responsibility of several groups within the Distribution Business Units—Distribution Operations, Central Maintenance and Street Lights. These groups maintain and construct distribution facilities in accordance with applicable governmental requirements, the National Electric Safety Code, and other industry standards. Distribution Operations supervises the construction and maintenance projects performed by FP&L's employees, while Central Maintenance monitors and oversees work completed by FP&L's contractors.

Distribution Operations consists of five regions: Broward, Miami-Dade, North, West, and East. Each region is directed by a General Manager who oversees several area offices within the region. The area offices are responsible for the construction, maintenance, and restoration operations within their geographic areas. Each area office includes a management staff that is supervised by an area manager. Under the area manager are an Operations Lead who manages the day-to-day operations for each area; a production supervisor who oversees, monitors, and certifies the work performed by FP&L crews; a Resource Lead who develops the operational plan and manages the resources of the crews; and an Engineering Lead who reviews the design and ensures that it meets all applicable requirements. The regional organizational structure is consistent across FP&L's service territories.

Central Maintenance consists of the same five regions discussed above. The Central Maintenance Manager oversees the five regional Central Construction Leads. Each regional Lead is responsible for overseeing the work that is performed by his/her staff, including all Contractor Compliance Representatives. The CCRs are responsible for overseeing, monitoring, and evaluating the construction projects being completed by contractors.

Has the company established goals and objectives for its quality assurance programs for distribution construction projects?

FP&L management states that its established goals and objectives for its Distribution Construction quality assurance programs are to ensure that its facilities are constructed in compliance with all applicable local, state, and federal, regulations, including the National Electric Safety Code. In this regard, FP&L maintains and updates it standards (e.g. Distribution Engineering Reference Manual, Distribution Construction Standards, and Service Training Operations Manuals) as well as its quality assurance procedures to ensure that construction materials are appropriately inspected when received, the appropriate materials are used for each job, and that facilities are constructed per all applicable requirements.

FP&L's procedures also require compliance certification from the FP&L production supervisor and work crew's foreman for all distribution construction projects completed by FP&L employees. For work completed by a contractor, FP&L requires verification from both its CCR and the contractor's general foreman.

How does FP&L work to achieve its goals and objectives?

FP&L management states that it makes every effort to continually strengthen its quality oversight programs for distribution construction projects. In 2006, FPL developed a new training manual for all CCRs to ensure consistency and standardization of CCRs' responsibilities for quality oversight of contractors. Over the last few years, FP&L has developed design tools and aids to assist designers and ensure that facilities are built to standards. For example, FP&L uses a computer program for construction design purposes which, based on certain inputs and criteria selected by the designer, will automatically size and select the appropriate poles, conductor, and transformers for the project. In 2008, FPL implemented a Constructability Process for larger construction projects, where engineers, designers, project managers, CCRs, and contractors review, prior to construction, the design feasibility and actual site conditions for each project. The company believes that this review ensures that necessary changes are identified and resolved prior to construction.

Central Maintenance and Construction is currently working on centralizing its evaluation functions. Once completed, FP&L will have one centralized group to audit and analyze the quality of work being performed by the contractors across all its regions. Upon receipt of the CCRs' documented quality inspection and performance evaluation results, the auditors in the centralized monitoring unit will perform a "check-the-checker" role by selectively auditing and analyzing the results, including performing on-site quality control audits. FP&L anticipates implementation of this process during the first quarter of 2009.

FP&L is also developing a new web-based application for documenting the quality inspection and performance evaluations that are conducted by each CCR. Once implemented, this application, in conjunction with the Workforce Management System (WMS), should enable FP&L to more efficiently monitor and analyze the CCRs' quality inspection and performance evaluations results region wide. It will also allow for improved tracking and managing of the findings and the identification of problem areas and necessary corrective actions. FP&L anticipates this process to be implemented by first quarter 2009.

2.1 Contractor Oversight

Does the company employ outside contractors to complete distribution construction projects?

FP&L employs outside contractors to complete a portion of its distribution construction projects. For the period August 2007 through August 2008, approximately 42 percent of the company's construction projects were completed by contractors. Currently, the company has 38 active construction contracts in place. FP&L typically uses contractors for larger construction projects, as contractors can focus their efforts on those projects while FP&L employees focus on day-to-day needs involving smaller projects and restoration of service conditions. The company does have maintenance contracts in place for routine, maintenance construction projects as well.

FP&L determines and describes, in a request for proposal, the scope for the distribution construction work that FP&L is expecting from a contractor. The request for proposal is handled through an open bid process. A bid can be initiated for a single project or maintenance contract. In selecting a contractor, FP&L's contractor group evaluates all submitted proposals and determines whether the contractor meets certain conditions, such as proof of liability insurance, licensing, financial stability, past performance, capability, and certifications. Upon completion of the evaluation process, a recommendation goes to Distribution management for approval. Once approved, the contract negotiations must be completed prior to hiring the contractor. Upon contract signing, the contractor is officially hired by FP&L to perform the distribution construction work in accordance with the contract. The company does not automatically renew any of its contracts and does not seek "single-source" contracts. Each single-job contract expires at project completion, while the maintenance contracts are typically three years or less in duration.

FP&L construction contracts contain three sections: the General Terms and Conditions, the Supplemental Terms and Conditions, and the Purchase Contract. The combination of these three documents govern the expectations, work performance, and pricing for each contractor.

The General Terms and Conditions is a standard legal document that is universal for all construction contracts. This document includes the general expectations and equipment for each contractor. Specific components include supervision of work, right to audit and inspections, adherence to standards, codes, and applicable laws. The Supplemental Terms and Conditions are very similar for each contract, but it may contain specific negotiations between the company and contractor. Typically, components in this section address job assessments, damage to public property and FP&L property, quality of work inspections, and maintaining workers' proof of certification and training. The Purchase Contract is specialized to the specific contractor and job requirements. This document may address safety requirements, training requirements, and contract pricing.

How does the company document the construction quality and compliance of projects completed by its outside contractors?

FP&L CCRs monitor whether contractors are constructing distribution facilities in accordance with all applicable regulations and standards. The company has specific policies and procedures detailing the oversight responsibilities for the CCRs. Adherence to the policies is documented through contractor quality inspections and performance evaluations conducted by the CCRs, as well as through an incident tracking database. When the CCRs complete their on-site quality inspections and performance evaluations they currently document their findings in the Contract Administration Management System (CAMS) database.

FP&L requires compliance certification from the contractor's general foremen for all completed distribution construction projects by FP&L's contractors. For each completed project, the foreman, along with the CCR, are required to sign-off the "as-built" print attesting to compliance with all applicable local, state, and federal regulations, including National Electric Safety Code and other industry standards.

After CCR review, the signed prints are sent to the Production department for the administrative technician to finalize all necessary documentation. Once the job closing documentation is complete, the prints are sent for final as-builts and payment processing. FP&L maintains all of its construction specifications and as-built prints pursuant to its "facilities retirement +10 years" records retention requirement. The records are maintained in the CAMS database for three years and then archived for a total of ten years. These records are used to track the number of contractor quality inspections and performance evaluations completed by the CCRs and to track the inspection results to evaluate each contractor's overall performance.

By the end of 2008, FP&L anticipates transitioning from its CAMS database to the WMS system for documenting and maintaining its distribution construction records. The company also plans to launch a new web-based application to better document, track, and manage contractor quality inspection and performance evaluation results, findings, and the necessary corrective actions. Once implemented, audit staff believes the application should enable FP&L to more efficiently monitor and analyze the number of completed quality inspections and performance evaluations and the inspection results region wide. This should also allow for improved tracking and managing of the findings and the identification of problem areas and necessary corrective actions.

Does the company employ adequate management controls and resources to ensure that its contractors are in compliance with all applicable construction standards?

FP&L has a dedicated staff of associates who monitor and evaluate its contractors. The CCRs perform a similar role as the production supervisors within the FPL employee work units. However, the CCRs provide more direct oversight and are required to document inspection results. This group of associates is also fully independent of the contractors.

When a job is assigned to a contractor, the CCR will complete a pre-construction constructability assessment to ensure that the job can be constructed as designed by the engineering group. Once the CCR has verified feasibility of the job, he or she will meet with the construction crew to discuss the project. After both the CCR and contract lead agree to the design, the team will begin the construction project.

The CCR continues to monitor the progress of the project and track the activities of the contract workers. FP&L does not require that the CCRs visit each site on a scheduled cycle; rather, management allows the CCRs to determine which projects require greater oversight and place emphasis on these projects. Some CCRs, based on their service territory, are able to visit each ongoing construction project more frequently, while other CCRs may be limited based on geographical or workload limitations within their territories.

Does the company have a detailed process to monitor the construction practices of its outside distribution contractors?

FP&L requires CCRs to monitor and verify contractors are constructing distribution facilities in accordance with all applicable FP&L standards. CCRs are responsible for ensuring

that all of FP&L's distribution construction processes are followed properly by contractors. CCRs capture the level of contractor adherence by performing on-site monitoring, quality inspections, performance evaluations, and incident tracking. This group is also responsible for ensuring that each distribution construction project is completed on time and within budget.

FP&L requires each CCR to satisfy three categories of reviews in monitoring and documenting contractor quality inspection and performance evaluation results:

- A *quality inspection* is to be conducted and a checklist is to be completed regarding the quality of work performed by the contractor upon completion of a work order for each contracted work order over 100 construction man hours and for 10 percent of remaining work orders.

- A *performance evaluation* is to be conducted and documented to evaluate the overall job performance of a contractor. An evaluation is to be performed at least once a month on all contractors and also one for each work order that exceeds $100,000 of labor, vehicle and equipment cost.

- A *performance evaluation* may also be conducted of the job performance of a contractor not associated with a specific work order and is to be completed on an as-needed basis.

FP&L is currently evaluating its threshold requirements for quality inspections and performance evaluations. The company may adjust these requirements once its evaluation is complete.

The Central Construction Leads are responsible for overseeing the work performed by the CCRs to ensure that they are complying with the company's requirements. The CCRs perform their monitoring functions through on-site quality inspections and performance evaluations and document their findings in the CAMS database. In order to review the collected data, the leaders must manually retrieve their respective regional CCR inspection results from this database.

The Central Maintenance Manager, who oversees each of the five regional leads, reviews the region wide CCR report summary which is referenced as the *Contractor Quality Inspection Report*. The report shows the percentages of quality inspections conducted for each CCR region wide, and it indicates whether or not the percentages satisfy the required threshold levels.

While the company states that it monitors inspection results, information provided during this review did not show a consistent focus on these results. A CCR lead supervisor stated during an interview that the management report detailing the CCR inspection completions had not been circulated in recent months. The most recent available copy provided to audit staff during the review was for January 2008. FP&L states that this was the result of system modification and enhancements, currently in process. These modifications should be completed by the end of 2008.

Audit staff reviewed this monthly FP&L management report which details the percentages of CCRs meeting the required thresholds for quality inspections for 2007. Specifically, this management report details, on a monthly basis, the number of qualifying work

orders completed and the number of corresponding quality inspections completed by each service territory. Audit staff has summarized this information in Exhibits 1 through 4.

Projects Requiring More Than 100 Contract Hours

EXHIBIT 1 shows the percentage of each region's annual adherence to the requirement for a quality inspection on each project over 100 man hours. FP&L requires its CCRs to complete a quality inspection for each of these projects within this category. As this exhibit shows, no region completed all the necessary quality inspections, as required by FP&L policy. The Dade region had the lowest percentage of compliance, completing only 68 percent of the required inspections. Conversely, the Broward region has the highest rate, completing 93 percent of the required inspections.

Annual Quality Inspection Compliance for Construction Projects Requiring More Than 100 Construction Man Hours 2007

Region	Number of CCRs	Number of Qualifying Work Orders	Number of Inspections Completed	Percentage of Inspections Completed *(100 Percent for Compliance)*
Dade	12	382	258	68%
North	7	252	196	78%
East	11	258	222	86%
West	10	437	381	87%
Broward	5	115	107	93%
Company	45	1,444	1,164	81%

EXHIBIT 1 *Source: Data Request 1.9, 2.1, & 4.5*

EXHIBIT 2 examines the monthly percentages of quality inspections competed for all jobs that required more than 100 construction man hours by service area. As Exhibit 2 highlights, only one service area, the newly-formed Naples area, completed the number of inspections required by the company. The four service regions in the Dade region consistently missed this requirement for the vast majority of months in 2007. The service areas within the North region struggled to meet this goal in the first part of the year, but improved its quality inspection rates in the last half of 2007. Overall, in 2007, the company states that it completed a quality inspection on 88 percent of the jobs within this targeted range and that 36 of its 50, 72 percent, of the associates employed during 2007 did not complete all the quality inspections as required by policy.

Quality Inspections Completed Monthly on Construction Projects Requiring More Than 100 Construction Man Hours 2007

Service Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Percentage *(100 % Required)*	Annual Qualifying Work Orders
Broward Region														
Gulf Stream	100%	100%	100%	100%	83%	100%	*	100%	0%	67%	*	0%	**92%**	39
Pompano	80%	100%	100%	100%	100%	100%	100%	50%	100%	0%	*	100%	**86%**	28
Wingate	100%	100%	86%	100%	100%	100%	100%	100%	100%	*	100%	100%	**98%**	48
Dade Region														
Central Dade	63%	63%	86%	87%	79%	73%	75%	86%	73%	86%	100%	80%	**78%**	171
North Dade	100%	83%	67%	44%	75%	50%	100%	50%	75%	88%	50%	40%	**64%**	70
South Dade	83%	50%	67%	80%	100%	57%	29%	29%	25%	30%	33%	0%	**46%**	90
West Dade	100%	50%	100%	100%	82%	40%	67%	67%	0%	100%	75%	*	**75%**	51
North Region														
Brevard	100%	82%	100%	86%	91%	*	100%	100%	100%	100%	100%	*	**93%**	72
Central Fl	56%	78%	58%	57%	89%	88%	87%	100%	100%	100%	100%	*	**79%**	112
North Fl	63%	100%	57%	10%	50%	75%	0%	100%	0%	75%	100%	100%	**60%**	68
West Region														
Fort Myers	-	-	-	-	-	100%	100%	100%	91%	100%	100%	67%	**93%**	61
Gladiolus	80%	87%	100%	94%	91%	-	-	-	-	-	-	-	**91%**	64
Golden Gate	100%	92%	100%	100%	100%	-	-	-	-	-	-	-	**99%**	76
Gulf Coast	100%	*	100%	*	50%	-	-	-	-	-	-	-	**80%**	5
Manasota	85%	100%	88%	92%	70%	67%	20%	46%	83%	25%	60%	100%	**69%**	113
Naples	-	-	-	-	-	100%	100%	100%	100%	100%	100%	*	**100%**	37
Toledo Blade	83%	67%	67%	100%	80%	100%	100%	89%	80%	100%	100%	100%	**89%**	81
East Region														
Boca Raton	88%	81%	100%	69%	86%	100%	100%	67%	*	80%	100%	*	**83%**	71
Treasure Coast	70%	88%	94%	78%	91%	100%	100%	100%	100%	78%	100%	*	**88%**	116
West Palm	100%	100%	33%	100%	100%	100%	100%	100%	80%	88%	100%	100%	**86%**	71
Total Qualifying Work Orders	**169**	**143**	**167**	**146**	**186**	**130**	**118**	**107**	**70**	**99**	**57**	**52**		**1,444**

**No qualifying work orders were performed during these months.*

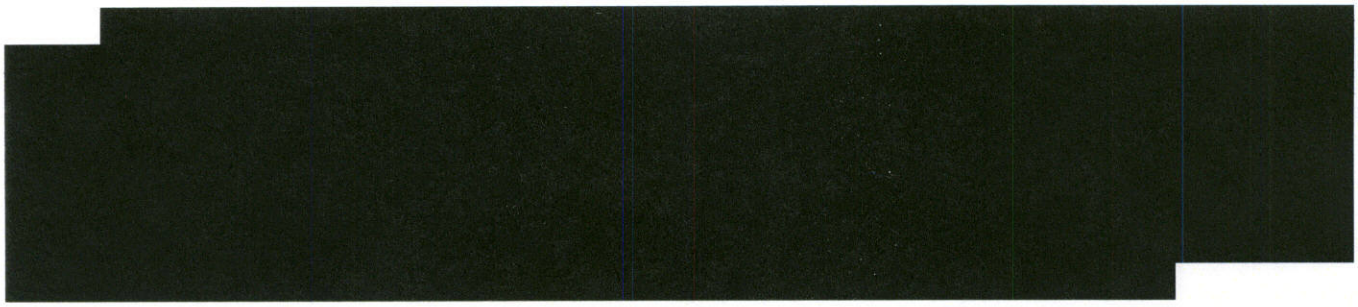
- Realignment of the West Region in June 2007

Green=100% Inspection Objective Achieved

Red=100 % Inspection Objective Not Achieved

Source: Data Request 1.9

EXHIBIT 2



Projects Requiring 100 Man Hours or Less

In addition to the required inspections for its larger projects, the company requires its CCRs to complete a sample audit of 10 percent of the remaining jobs. **EXHIBIT 3** details the annual results for each region in completing the required sample inspections. Each region met the 10 percent threshold for the year, with Broward completing an inspection on 81 percent of its work projects. This region has the least number of work orders and therefore its staff is able to place greater focus on its current projects. While the North region met the minimum annual requirement, **EXHIBIT 4** shows that two of the service areas within this region were inconsistent in meeting this requirement during the year. Overall, FP&L states that 87 percent of its CCRs met this annual sample requirement.

Annual Quality Inspection Compliance on Construction Projects Requiring 100 Construction Man Hours or Less 2007

Region	Number of CCRs	Number of Qualifying Work Orders	Number of Inspections Completed	Percentage of Inspections Completed *(10 Percent for Compliance)*
Dade	12	376	133	35%
North	7	954	93	10%
West	10	1,402	305	22%
East	11	480	161	34%
Broward	5	147	119	81%
Company	45	3,359	811	24%

EXHIBIT 3 *Source: Data Request 1.9, 2.1, & 4.5*

Exhibit 4 summarizes, at the service area level, the percentage of CCRs that met the 10 percent sampling threshold on a monthly basis. Two service areas, Brevard and North Florida—both within the North region—did not meet the annual threshold requirement in 2007. The CCRs in these two areas only met the inspection threshold a combined three months during this year. Also, while the Boca Raton and West Dade service areas met the threshold requirement of 10 percent overall in 2007, the CCRs were inconsistent in completing these inspections on a monthly basis.

Monthly Quality Inspections Compliance on Construction Projects Requiring 100 Construction Man Hours or Less 2007

Service Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Percentage *(10 % Required)*	Annual Qualifying Work Orders
Broward Region														
Gulf Stream	100%	100%	100%	86%	100%	75%	100%	100%	100%	100%	100%	100%	**95%**	42
Pompano	100%	100%	100%	100%	100%	*	100%	*	100%	100%	100%	*	**100%**	25
Wingate	82%	90%	50%	75%	80%	75%	100%	25%	41%	100%	33%	100%	**68%**	80
Dade Region														
Central Dade	45%	33%	25%	43%	13%	67%	0%	24%	83%	46%	100%	67%	**35%**	143
North Dade	100%	67%	82%	50%	25%	*	50%	67%	67%	0%	67%	0%	**60%**	40
South Dade	36%	45%	17%	47%	38%	39%	55%	58%	14%	0%	33%	0%	**37%**	139
West Dade	100%	0%	44%	0%	20%	0%	0%	0%	14%	0%	0%	0%	**13%**	54
North Region														
Brevard	3%	5%	6%	5%	9%	2%	5%	2%	5%	1%	5%	10%	**4%**	553
Central Fl	36%	25%	29%	15%	19%	31%	45%	50%	25%	30%	0%	50%	**27%**	243
North Fl	6%	5%	0%	0%	0%	20%	0%	20%	0%	0%	0%	0%	**3%**	158
West Region														
Fort Myers	-	-	-	-	-	30%	2%	10%	15%	24%	6%	4%	**13%**	216
Gladiolus	15%	7%	15%	11%	13%	-	-	-	-	-	-	-	**12%**	291
Golden Gate	40%	23%	29%	52%	53%	-	-	-	-	-	-	-	**36%**	289
Gulf Coast	*	*	100%	*	0%	-	-	-	-	-	-	-	**50%**	4
Manasota	18%	21%	12%	12%	0%	60%	7%	12%	44%	23%	29%	0%	**17%**	188
Naples	-	-	-	-	-	30%	25%	29%	*	67%	*	100%	**34%**	47
Toledo Blade	10%	22%	22%	10%	5%	49%	33%	34%	36%	33%	75%	67%	**23%**	367
East Region														
Boca Raton	0%	19%	0%	13%	0%	0%	0%	0%	25%	50%	0%	*	**10%**	103
Treasure Coast	38%	52%	23%	38%	73%	27%	17%	36%	43%	27%	0%	100%	**34%**	279
West Palm	75%	80%	25%	67%	50%	17%	29%	84%	80%	30%	100%	40%	**58%**	98
Total Qualifying Work Orders	**431**	**421**	**367**	**403**	**383**	**309**	**249**	**303**	**168**	**175**	**84**	**66**		**3,359**

**No qualifying work orders were performed during these months.*
- Realignment of the West Region in June 2007

Green=10% Inspection Objective Achieved
Red=10% Inspection Objective Not Achieved

EXHIBIT 4

Source: Data Request 1.9

[redacted]

Quality Inspection Variances

Audit staff examined the number of quality inspections completed by the CCRs for the period August 2007 through August 2008. For this period, FP&L reported that 10,566 distribution construction projects were completed by contractors and completed 2,110 quality inspections on these projects. **EXHIBIT 5** details the numbers of variances identified by CCRs during the quality inspections performed during this period.

Number of Quality Inspection Deficiencies
August 2007 – August 2008

Severity of Deficiency	Broward Region	Dade Region	North Region	West Region	East Region	Company Total
Not Assigned	1	0	1	22	3	**27**
Minor Exception	6	12	4	55	67	**144**
Unacceptable Condition – *customer affected dissatisfied*	2	0	0	3	3	**8**
Work Not to Standard – *not serious*	1	10	1	20	26	**58**
Work Not to Standard – *serious system integrity safety concern*	0	2	0	4	4	**10**
Total Deficiencies	**10**	**24**	**6**	**104**	**103**	**247**

EXHIBIT 5 *Source: DR 3.4c*

As this Exhibit shows, the company identified 247 (12 percent) construction deficiencies during the 2,110 quality inspections performed in the period. When a deficiency is observed, the company rates these variances into five categories, ranging from minor exception to serious concern. Of these 247 deficiencies, 144 (58 percent) were categorized as minor exceptions, but 10 (4 percent) were categorized by the company as having a "serious system integrity safety concern." The majority of these most serious deficiencies were located within the Treasure Coast and Toledo Blade service areas. The root cause of inspection variances should be a priority for the company. This trend may emphasize the need for the company to more closely monitor these areas and re-assess its processes and internal controls. The results of such efforts should enable the company to establish and implement corrective actions which will help prevent, or at least mitigate, deficiencies in these areas in the future.

Performance Evaluations

Along with quality inspections, the CCRs are required to complete a performance evaluation on every project that cost more than $100,000 to construct. However, for 2007 the company states that a performance evaluation was completed on 69 percent of these qualifying projects. The company also states that only 63 percent of the CCRs achieved this evaluation requirement during the year.

In addition to the requirement to complete evaluations on these high-dollar jobs, the company requires that each CCR complete a monthly performance evaluation on each contractor. However, the company states that its systems are unable to track these monthly inspections results and was not able to provide the number of evaluations completed by each CCR during 2007. Therefore, staff was not able to determine if the company is meeting this requirement. FP&L management states the company is reviewing this metric and requirement.

Summary

Overall, audit staff recognizes that FP&L has established a high standard in requiring its CCRs to perform quality inspections on 100 percent of specified projects. However, audit staff does not believe that the company has placed an adequate focus on ensuring that all of these required quality inspections are being performed by its CCRs. While the percentage of completed quality inspections has increased since 2004[3], 72 percent of the CCRs did not achieve the company's requirement in 2007. Additionally, audit staff does not believe that the company has maintained adequate management oversight to ensure that the required performance evaluations are completed in accordance with company policy.

2.2 FP&L Construction Personnel

Does the company employ adequately trained and certified distribution construction personnel?

FP&L requires that each of its distribution line personnel complete a detailed training program. The company has a three-year Journeyman certification program that includes classroom and on-site apprenticeship training. Each distribution area crew consists of certified workers and, at times, an apprentice trainee. Each worker is required to maintain certification by attending periodic training refresher courses. When an associate is hired who has a journeyman's certification from another utility, FP&L requires the associate to attend specific training courses to become certified in specific FP&L work methods and other mandated training.

Each FP&L production lead and area manager is responsible for ensuring that all workers are current in their training cycles. Employee training records are maintained online, and management receives training reminders when an associate is required to attend a course. Depending on the topic, training refreshers can be required every one to three years.

[3] 2005 FPL Internal Audits: *Power System Distribution Contract Administration Review*, October 2005 and *Power System Distribution Contract Administration Review Follow-Up*, December 2006. Data Request 1.7.

Along with its specialized training program, the company also provides periodic notices, in the form of flyers and monthly publications such as the *Distribution Line*, that notify employees of changes to policies and procedures, safety concerns, or equipment installations. These notifications are distributed to each area office and are also available to employees via the company's Intranet.

Does the company have a process to monitor the construction practices of FP&L's own distribution construction personnel?

FP&L monitors its construction practices of its distribution staff through its normal management oversight process. When a job is assigned to an FP&L distribution area for construction, the area management team will coordinate to confirm the constructability of the project, verify the job site will support the proposed job, and ensure that the job is designed in accordance with required specifications. Once all pre-construction requirements are met, the production supervisor will assign the job to an FP&L work crew.

Each FP&L work crew consists of certified journeymen with a designated crew foreman. The lead crew foreman is responsible for monitoring the daily oversight of the job from the start of construction until completion. During the construction process, the company production supervisor may visit the site to monitor and evaluate the progress of the job.

Once the work is complete, the lead crew member and the production supervisor are required to sign-off the job project design specification plan, verifying that the job was completed according to the specifications. However, the production lead is not required to visit each construction site at completion to verify that the work has been performed according to the design standards. According to FP&L management, while it is not possible to visit each construction site prior to the sign-off, the production supervisors do attempt to visit the larger, more complex, construction projects.

The company does not have in place an independent oversight inspection process for its FP&L work crews to verify that work is completed according to design specifications. Rather, the company relies on the worksite crew foreman and visits from its production supervisors to ensure that the work is completed according to all applicable construction and safety standards.

[redacted]

How does the company document the construction quality and compliance of the projects completed by employees?

FP&L does not perform independent quality oversight inspections of construction projects completed by its crews. The company states that it monitors projects through routine management oversight during the construction process. As noted, management and the crew leader sign off on each project at completion of the job, but management is not required to visit the construction site to ensure that each project meets all required standards. This design sheet is FP&L's only documentation that the job was completed as designed. Once signed, these design

sheets are used to update the company's master system map and are maintained for at least seven years. The company does not perform or document any other assessment or evaluation inspections for its FP&L work crews.

The company does conduct periodic safety evaluations, which are documented and maintained by the company. However, these inspections strictly focus on monitoring the safety practices of the job site, not the quality of the work being performed by the crew. Each production supervisor is required to perform at least two safety inspections per week from all active projects.

As discussed in Section 1.4, the Commission's Bureau of Safety engineers inspect FP&L's completed construction projects and identify any variances from applicable standards. From August 2007 through August 2008, the Commission's engineers identified 746 electric-related variances on projects recently completed by the company. Although this represents variances on contracts completed by both FP&L crew members and outside contractors, providing independent monitoring and oversight of ***all*** construction projects by FP&L could reduce the number of variances observed during the Commission safety inspections.

Does the company employ adequate management controls resources to ensure that its staff is in compliance with all applicable construction standards?

The company states that it uses a series of management oversight steps, before and during a construction project, to ensure that the work performed is in compliance with all applicable standards. Prior to the start of a construction project, the area management staff evaluates the engineering design, the constructability of the project, and the construction site to ensure the design can be completed within standards. Once management determines that the project design and the site are feasible, a production supervisor will assign a work crew and, depending on the size and length of the project, conduct onsite monitoring of the workers' progress. FPL's service area management team consists of an operational lead, production supervisor, an engineer lead, and a resource lead.

While audit staff recognizes that management's daily oversight of its staff provides a necessary control for ensuring workers' accuracy, the demand for management's attention by other job responsibilities can limit the effectiveness of this control. Establishing additional and independent oversight, such as conducting spot-check evaluations similar to FP&L's program for contract construction work discussed in Section 2.2, would provide an additional control to ensure that the work is being constructed according to all specifications. This oversight should also be performed by a party who is independent of the operation being examined. This independence is a requirement for any audit function and is specified in the Institute of Internal Auditors' *Standards for the Professional Practice of Internal Auditing*. [4] Therefore, an independent audit function is preferable to the current practice of relying on operational oversight alone.

[4] The Institute of Internal Auditors Standards *for the Professional Practices of Internal Auditing*, Standard 100.01 states "internal Auditors should be independent to the activities they audit. . . Independence permits internal auditors to render the impartial and unbiased judgments essential to proper conduct of audits.

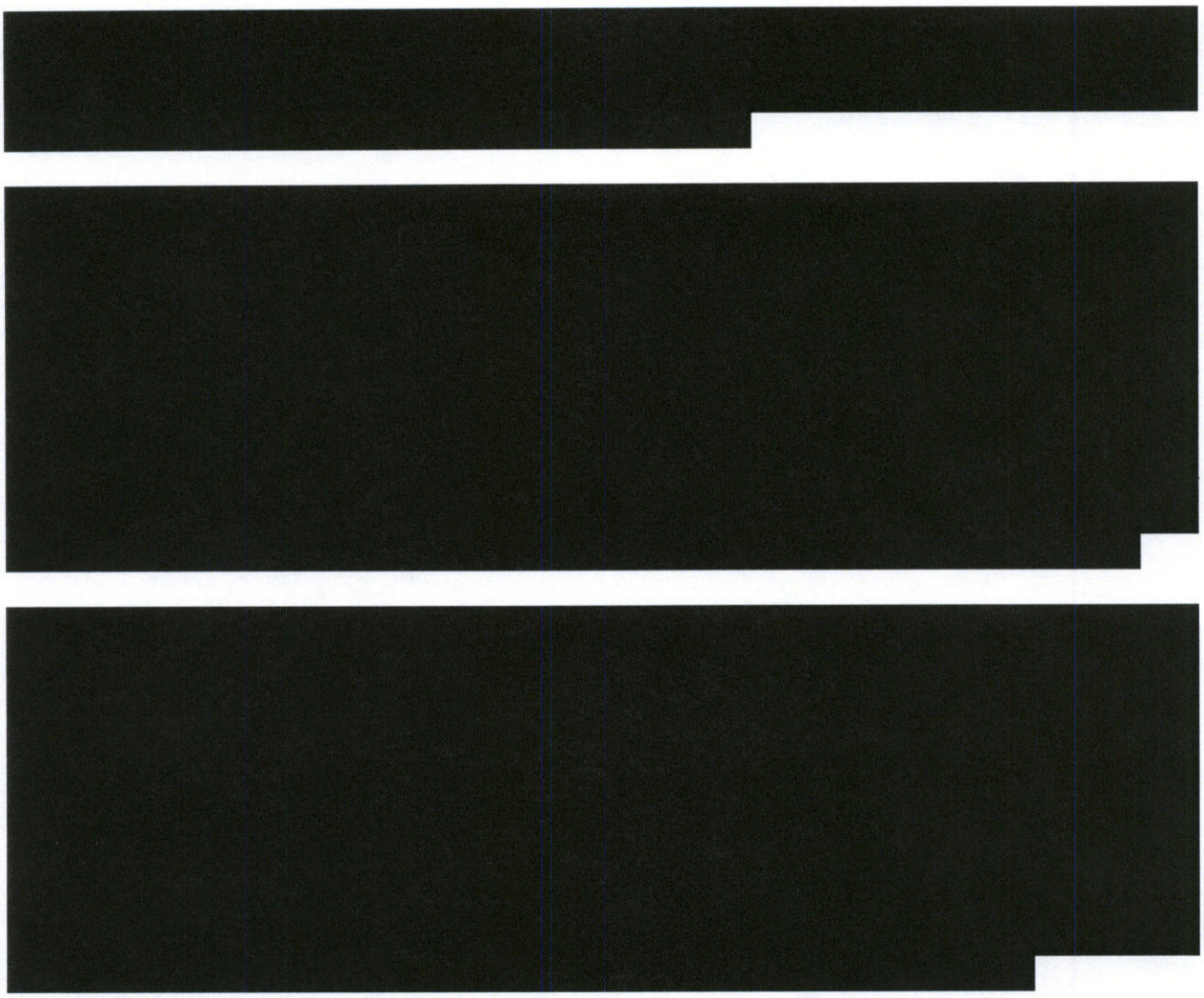
2.3 FPL Corporate Audit Oversight

Does FPL's Audit Department periodically assess its distribution quality control assessment processes?

[redacted]

Has FP&L's distribution construction quality control processes been reviewed by outside audit organizations?

[redacted]



2.4 Overall Opinion

FP&L uses a combination of company personnel and contractors to perform its distribution construction projects. From August 2007 through August 2008, the company completed 25,370 distribution construction projects; 14,804 (58 percent) were performed by FP&L personnel and 10,566 (42 percent) by contractors. However, in terms of construction man hours, FP&L states that its crews perform approximately 30 percent of the total work while its contractors perform approximately 70 percent of the total work. FP&L manages, monitors, and evaluates its contractors differently from the way it monitors and evaluates its own FP&L work crews performing similar work.

While the majority of its construction projects are completed by company personnel, FP&L places greater emphasis on quality oversight monitoring of its contractors. FP&L has a

[5] AEGIS, "Underwriting Risk Assessment: Florida Power & Light Company," June 18, 2007, pg 2.
[6] Ibid., p 16.
[7] Response to Commission Data Request 4.6, October 2008.

more developed evaluation program for its contractors and is currently expanding the oversight process of its Contractor Compliance Representatives (CCR) even further to include a centralized review unit that will provide an additional layer of review. Staff recognizes that the company tends to utilize contractors for larger, more labor intensive projects which may require greater monitoring and oversight. FP&L appears to have more concerns about outside contractors' work quality than it does for FP&L trained crews, resulting in a higher degree of contractor oversight.

In contrast, the company's current quality assurance oversight of its FP&L personnel is encompassed within the production supervisor's and crew foreman's normal job duties. While FP&L states that it may monitor and inspect a construction project at any time, the company does not document or complete an independent assessment of its crews' performance, and no written construction quality inspections or performance evaluations are completed on any of these projects. In addition to its management oversight, FP&L states that it places oversight emphasis (on the front-end) through its exclusive training and certification programs to ensure that all of its employees have the proficiency to construct distribution facilities in accordance with all applicable requirements, National Electric Safety Code, and other industry standards. Staff believes that the work performed by FP&L's personnel is equally subject to safety and reliability concerns and should be monitored and evaluated accordingly.

During the 13-month period August 2007 through August 2008, the Commission's Bureau of Safety engineers identified, during their inspection of previously completed projects, 746 electric safety point variances out of a possible 21,362[8] on projects completed by either contractors or FP&L personnel. These results indicate that the company's oversight processes—its training and management oversight of FP&L personnel and its CCR oversight of contract workers—does not fully ensure that construction projects are being completed to standard. The recently implemented centralized and independent auditing body for contractors may help improve a portion of these variances, while the implementation of a similar process for FP&L personnel would ensure all projects are evaluated under the same scrutiny.

Specifically, staff notes the following findings of FP&L's quality assessment process for its distribution construction program for work performed by both FP&L and contractors:

FP&L Contractor Oversight

- Not all of FP&L Contractor Compliance Representatives meet the company's established requirements of quality inspections and performance evaluations in 2007.
- FP&L requires each Contractor Compliance Representative to complete a monthly performance evaluation on each contractor. Staff cannot ascertain if this requirement is being met because the system does not track the results for this requirement.
- During 2008, FP&L was unable to generate a management report that tracks the number and percentage of quality inspections and performance evaluations completed by each

[8] The Commission does not break inspection points out by utility type. Therefore, the 21,362 include variances that could occur with non-electric attachments

Contractor Compliance Representative for contractor work crews. The last report available to the Commission was January 2008.

FP&L Personnel Oversight

- FP&L does not conduct independent quality assessment evaluations on construction projects completed by FP&L personnel (this is contrary to the quality inspections and performance evaluations that are completed on work performed by contract workers.)

- During late 2007, FP&L discontinued its management report that monitors construction work completed by FP&L personnel. The company currently does not have a consolidated management report that monitors this activity.

3.0 Company Comments

The follow comments are provided by FP&L management and are included in their entirety.

2.1 Florida Power & Light Company

FPL COMMENTS - FPSC REVIEW OF
FPL's QUALITY ASSURANCE PROCESS FOR DISTRIBUTION CONSTRUCTION

General

- FPL has had and continues to have in place adequate policies, procedures and processes to ensure that its distribution facilities are constructed in compliance with all applicable standards and requirements. Based on the results of inspections completed by the FPSC's safety engineers for the period August 2007-August 2008, 97% (20,616/21,362) of all potential safety point variances passed inspection.

- Additionally, for almost its entire history, FPL's distribution construction standards have exceeded the NESC minimum standard (Grade C), the standard adopted by most electrical utilities throughout the industry. Up until 2007, FPL's distribution construction standards were built to Grade B, the highest or strongest NESC standard for distribution construction. In 2007, FPL revised its design guidelines, so that it now applies extreme wind-loading criteria to new overhead construction, major planned work, relocation projects and daily work activities. This standard will provide for an even stronger, more resilient and more reliable distribution system.

- Benchmarking data indicates that FPL's distribution system delivers superior performance. Over the last decade, FPL's overall reliability, as measured by SAIDI, continually ranks best among investor owned utilities in Florida, which as a whole performs very well, and has averaged approximately 45% better than the national average.

- In summary, the combination of FPL's construction procedures, policies and processes, high construction standards, storm preparedness initiatives (e.g., vegetation management) and on-going reliability programs have produced a reliable distribution system that meets or exceeds all applicable standards.

FPL Contractor Oversight

- As referenced in the audit report, to help ensure contractor work is appropriately monitored and reviewed, FPL has established very high and stringent internal inspection standards for contractor completed work – 100% inspection of jobs with CMH > 100 and 10% inspection of jobs with CMH < 100. In 2007, FPL inspected 81% (1,164/1,444) of all jobs with CMH > 100 on a system-wide basis. While this did not meet FPL's 100% internal inspection goal for jobs with CMH > 100, FPL should not be criticized for

establishing high standards nor should this be viewed as inadequate. For instance, if FPL's internal goal was to inspect a statistically valid sample of these jobs so that the sample would achieve a 99% confidence level with a 5% interval, FPL would have had to inspect 456 jobs. As can be seen, FPL inspected over 2.5 times (1,164 vs. 456) this amount. Also, in 2007, FPL inspected 24% (811/3359) of all jobs with CMH < 100 on a system-wide basis. This exceeded the internal goal of 10% by almost 2.5 times. Again, as described earlier, FPL's 10% internal goal for sampling jobs with CMH < 100 ensures that a more than sufficient amount of jobs are inspected. For a statistically valid sample to achieve a 99% confidence level with a 5% interval, FPL would have had to inspect 556 jobs with CMH < 100. FPL inspected almost 1.5 times (811 vs. 556) this amount.

- During 2007 and 2008, FPL's systems, e.g., WMS, used for capturing and monitoring contractor inspection results and performance evaluations, were undergoing enhancement and development. While oversight and monitoring of contractor work continued, FPL's systems were unable to capture, track and report on inspection results and performance evaluations during this time. Today, these system enhancements and modifications are nearing completion and are expected to be implemented no later than the end of the first quarter 2009.

- Quality inspections and job audit functions within the Central Maintenance and Construction group are currently being centralized and will be in place for 2009. This group's independent review will provide additional objectivity and help ensure consistent application of construction standards throughout FPL's system.

FPL Personnel Oversight

- Historically, FPL has relied on the skills and technical expertise of its craft workforce (bargaining unit) along with the supervisor/production lead (non-bargaining unit) monitoring and oversight to ensure that distribution facilities constructed by FPL personnel meet all standards and regulatory requirements. FPL's craft workforce must complete extensive training and certification to ensure that FPL's construction standards, guidelines, and processes are known and understood. Training includes self-study, instructor-led training, on-the-job training, practice under appropriate supervision, job-aides, as well as computer-based training. Training evaluations include quizzes, tests, performance demonstrations, performance examinations, and oral examinations. FPL requires the crew foreman/person in charge to sign off on "as-built" prints and the supervisor/production lead signs off and certifies that the project was completed as indicated on the "as-built" print. While not formally documented, supervisor monitoring and inspection of construction projects can occur prior to (pre-checks), during and after (post-checks) construction.

- Recent organization and process changes will now result in FPL personnel completed projects being audited and inspected (in addition to contractor completed jobs) by the newly created centralized auditing function within the Central Maintenance and Construction group.