Large Filing Separator Sheet

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Analysis of Figure 8-3 (above) yields the following observations:

- First, we note that internal budgeting processes are performed on a slightly different accounting basis than external FERC reporting (as presented in Section 8.2 above). Certain overhead loadings are included in FERC accountings that are not considered in the internal budgeting exercise. Thus, the values used across these sections (i.e. Figures 8-1 and 8-2 vs. Figure 8-3) are related to the same work, but are not presented here in identical accounting terms and thus the amounts do not tie.
- In 2006, CEI's capital expenditures were $69.1million, an amount $8.1million greater than the amount originally budgeted. A similar pattern occurred in 2005, when CEI's actual capital expenditure was $47 5 million or $11.7 million greater than originally budgeted (see Figure 9-5 below). Thus, we can find no evidence that FirstEnergy is "starving" the CEI system in recent years – further confirming the conclusions noted in Section 9-2. The CEI system is clearly an investment priority within FirstEnergy system of companies.

Several of the capital budgeting classifications changed in mid-year (a not uncommon event), resulting in some confusion in evaluating the relative measure of reliability related spending. Figure 8-4 below presents a reconciliation of the 2006 budget categories to estimate the real impact on reliability related spending:

Figure 8-4
2006 CEI Capital Budget – Reliability Reconciliation

2006 Variance Reconcilliation	
Non-Reliability Elements	Variance ($M)
Storm	$ 2.7
Misc. Non Storm / Non Failure	$ 2.9
Major Over Budget Items	$ 5.6
Misc Under Budget	$ (2.4)
New Load/Relos/Reinf	$ (4.2)
Major Under Budget Items	$ (6.6)
Reliability Elements	Variance ($M)
Obsolete/Det Equip	$ 24.2
Failures	$ 0.8
Reliability	$ (16.1)
Increased "Reliability Spend"	$ 8.9

Analysis of Figure 8-4 (above) in combination with Figure 8-3 (above) yields the following observations:

- Overall "reliability-related" (an imprecise term) investment was substantial, accounting for at least one-third of the 2006 capital spending. In our experience, this is a strong investment pattern when compared to other, similar systems.
- "Reliability-related" spending in 2006 was at least $8.9 million greater than originally planned. When considered in the context of the $8.1million in additional (unbudgeted) capital spending in 2006, it is clear that reliability-related investment was one of the company's highest priorities in 2006.

Thus, we conclude that the company has made a strong recent commitment to reliability-related spending in 2006 and shows evidence of similar investment patterns in 2007. There also appears to be little evidence that the there has been strong "crowding out" of reliability related investment in 2006.

Figure 8-5 below presents a similar budget assessment for the year 2005:

Figure 8-5
2005 CEI Capital Budget by Budget Category

2005 Capital Budget Variance Analysis			
	Planned	Actual	Variance
New Business	$ 3,248,394	$ 10,329,360	$ 7,081,026
Forced	$ 12,140,576	$ 18,330,383	$ 6,189,807
Condition	$ 6,272,823	$ 7,973,274	$ 1,700,451
Capacity	$ 179,203	$ 1,076,212	$ 897,009
Tools & Equip	$ 94,367	$ 771,166	$ 676,799
Street Light	$ 1,112,985	$ 1,624,364	$ 511,379
Facilities	$ 802,327	$ 941,784	$ 139,457
Vegetation Mana	$ 217,992	$ 329,148	$ 111,156
Jobbing & Contra	$ -	$ 61,630	$ 61,630
O&M	$ 1,750,709	$ 1,726,590	$ (24,119)
Meter Related	$ 3,326,135	$ 3,170,015	$ (156,120)
Other	$ 1,247,866	$ (90,368)	$ (1,338,234)
Reliability	$ 7,350,445	$ 3,231,449	$ (4,118,996)
	$ 37,743,762	$ 49,475,007	$ 11,731,245

Analysis of Figure 8-5 (above) yields the following observations:

- Budget categories changed from 2005 to 2006 (again, a not uncommon occurrence) making direct year over year comparisons difficult.
- In 2005 the spending shows that New Business and Forced (i.e. mandatory road moves, municipal work, etc.) investments were well in excess of plan, with spending on Reliability under budget by $4.1m.
- Taken together, the combination of the 2005 and 2006 reliability-related spending (i.e. the total of the two years) is still in excess of the budgeted amounts (+$8.9m (over in 2006) - $4.1m (under in 2005) or a net of +$4.8m over budget (combined 2005-2006)) and is (in total) still a strong component of the overall capital investment and at a high relative level .

8.4 Capital Planning and Improvement Processes

Our methodology to assessing CEI's *capital planning processes* (including *Project Prioritization)* is to evaluate whether they are truly holistic technical processes that begin with a clear identification and expression of system needs or issues (expansion commitments, reliability problems, etc.), are evaluated with a systematic and risk-considered approach that is designed to achieve optimal results given reasonable constraints (seasonal scheduling, availability of specialty tools or crews, etc.), and are automated to achieve systematic and reproducible results where appropriate.

Our standard for assessing these processes is not to expect a single, "best" way to approach these processes; rather, to verify that CEI is at a level of process maturity and effectiveness consistent with its size, condition, regulatory requirements, etc. and identify

those area where the company may be able to improve by implementing industry best practices from other leading utilities.

Our approach to measuring the *integrity* of CEI's capital-related business processes is to assess whether these processes are implemented as planned from a multitude of dimensions. First, is the capital planning process an integral part of overall business planning and budgeting process (e.g. setting business objectives, resource strategy, etc.), rather than an adjunct activity that requires subsequent integration / coordination with other plans? Second, *are the* capital plans implemented as planned and actively managed? Finally, are the inevitable changes to the plan (due to external events, new information, new priorities/issues, etc.) handled in a manner that is consistent with the decisions made during the "normal" annual planning cycle?

As a large, mature, investor-owned electric utility with a substantial base of technical expertise, we would expect to find CEI conducting capital planning and improvement processes that have the following characteristics:

- **Holistic** – the processes should integrate all capital requirements (new business, reliability, etc.) into a single planning and evaluation process.
- **Need- / Issue- Driven** – the origin of capital commitments should be clearly and systematically defined business- or technical-needs that are expressly satisfied through investment in the electric system. Actual investment alternatives may satisfy multiple needs / issues (e.g. reliability and capacity) and thus further highlighting the importance of the *holistic* objective (noted above).
- **Risk Measured** – the safety, technical, economic, and socio-political risks of funding or not funding a particular investment should be an integral part of the decision-making process. Such risks should incorporate both the probability and the consequence of failing to mitigate or eliminate system needs / issues.
- **Structured** – The nature and scope of the investments (e.g. Obligation to Serve, Reliability, Mandatory vs. Discretionary) should be well classified (and validated) at the time the need or issue is identified.
- **Standardized and Documented** – The processes should be highly standardized and not dependent on key individuals, well-documented to enable ongoing training and process refinement / improvement, and create an auditable "paper-trail" to ensure proper management and post-investment assessments.
- **Peer- , Supervisor- and Executive-Reviewed** – The inputs, analyses, decisions, and results of the processes should be actively and systematically reviewed and approved by all levels of the management team to ensure that the proper technical and regulatory requirements are met.
- **Annual Scope** – They should, as a minimum, be developed as part of an annual planning effort (multiple years are preferred) and should be systematically reevaluated throughout the year. Such defined annual plans (as opposed to continuous or 'rolling' plans) enable management to assess the impact of new or deferred projects on overall planned system performance.
- **Integrated with Budgeting and Authorization** – The capital planning effort should be an integral part of the annual budgeting process and the spending authorization process; there should be little or no effort necessary to "fit" the capital plans to operational budgets.

- **Resource Independent** – Initial definitions of work should be independent from the available resources; in short, the "work should define the required resources (both company and contractor)", not the other way around.
- **Automated** – The processes should be reasonably automated with packaged or customized software tools to encourage standardized, systematic analyses across participants, general process efficiency, and sound record-keeping of results.
- **Dynamic** – The process should be capable of integrating changes to the plans throughout the year and these changes / alternatives would be evaluated through the same process.

Our specific approach has been to review CEI's capital planning and improvement process in the context of the expectations noted above through a series of interviews with key participants and to review the company documents that address these topics.

CEI's planning process as described by the Company's planning professionals is composed of the following elements:

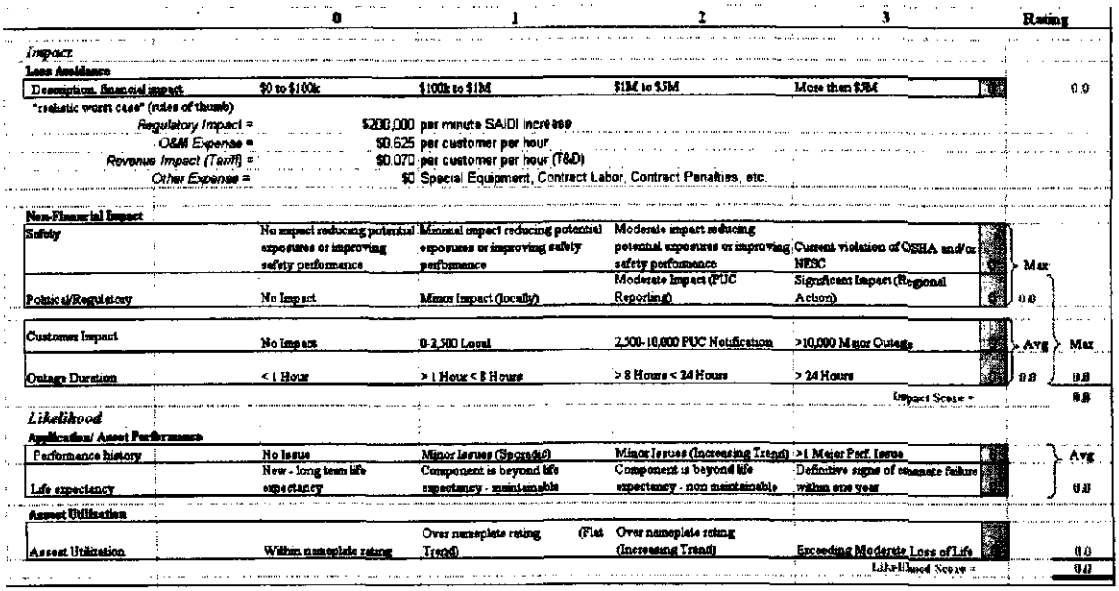
- Planning engineers define system-based needs that drive the analysis of potential technical options or alternatives. These options are evaluated for both technical and economic performance (they may have both capital and maintenance impacts) and are expressed or summarized as a *Request for Project Approval* and known informally as an "RPA".
  - These electric system-based needs are classified using a common issue / need framework known as the *Investment Reasons*. These classifications are presented in Figure 8-6 below. A subset of these needs or issues is classified as *Mandatory* reason and will be funded if technically approved.

Figure 8-6
CEI Investment Reason Categories

Classification Category	Roll Up	Investment Reason	Definition
"C" Mandatory	Cap	CAP-New Load	Costs associated with projects required to improve relieve or correct an existing or projected voltage or thermal condition. Some specific examples include new substations, transformer additions, transformer replacement, substation capacitor installation, line capacitor installation, and feeder/exit additions.
	Cap	CAP-Sys Reinf	Costs associated with reinforcing our infrastructure. This includes line terminal upgrades, line/wave traps, line reconductors (know line rating is under rated), line upgrades (pushing more amps through line because load has increased), replacement of a breaker due to load or interrupting current limitations, rebuilds to improve capacity.
	Real estate	FAC-Real Estate	Cost associated with the purchase, sale or lease of land or property, rights of way, easements, etc.
	Forced	FRC-Failures	Costs associated with replacement of failed equipment and devices.
	Forced	FRC-IPP/Muni Connect	Costs associated with interconnections requiring an interconnection Agreement to be signed by the interconnecting party. Includes charges due to scheduled or unscheduled plant shutdowns.
	Forced	FRC-Regulatory Req	Costs associated with Dx or Tx line and service projects required by federal or state regulatory bodies. These projects may not conform to our normal design and planning criteria's. Examples include replacing PCB equipment, changes to correct clearance problems, etc.
	Forced	FRC-Relocs-Highway	Costs associated with roadway or bridge projects.
	Forced	FRC-Relocs-Other	Costs associated with relocation of facilities not associated with road or bridge projects. Examples include moving overhead lines for swimming pools or sheds, etc. Moving poles for aesthetic reasons, etc. These costs can be billable or non-billable
	Forced	FRC-Storms	Costs associated with all weather related conditions.
	Meter	MTR-Meter Related	Costs associated with the installation or removal of meters.
	New Business	NEW-NB Commercial	Costs associated with providing service to those new customers that are primarily in the business of sale or transfer of a product or service. This includes primary and secondary extensions, and service drops required to connect these new customers to the existing distribution system.
	New Business	NEW-NB Industrial	Costs associated with servicing those new customers whose business primarily involves changing the form of a product. This includes primary and secondary extensions, and service drops required to connect these new customers to the existing distribution or transmission systems.
	New Business	NEW-NB Residential	Costs associated with servicing those new customers considered to be private households, including apartments, townhouses, condominiums and vacation homes. This includes primary and secondary extensions, and service drops required to connect these new customers to the existing distribution system.
	Other	OTH-Damage Claims	Costs and revenues resulting from First Energy claims against an outside party.
	Other	OTH-Joint Use	Costs and revenues associated with the joint occupancy of poles
	Street Lighting	STR-Lighting	Costs associated with all forms of street lighting and lighting services. Includes community lighting, dusk to dawn and area lighting for private customers, ornamental lighting, public street and highway lighting, for municipalities and associations. This includes both scheduled and unscheduled work.
"B" Improve Reliability	Reliability	REL-Reliability	Expenses incurred to improve/reinforce the reliability of the infrastructure assets. Examples include SCADA/MOABS additions, reclosure addition to Dx lines, relaying replacements, transrupters, CRI improvements, TX reliability index, etc. These costs may or may not be directed by a regulatory body.
"B" Maintain Condition	Condition	CND-Obsolete/Det Eqp	Costs associated with replacements of equipment due to inability to get parts, or outdated equipment. RTU replacements of aging equipment, full line rehab due to aging poles, transformer replacement due to gasing, breaker replacement due to poor performance or age, substation spare equipment, rebuilds because lines are falling down, carrier set replacements, batteries/charger replacements, oscillograph DFR replacements.
	Other	OTH-Other	Costs associated with miscellaneous type categories. Examples are accounting type entries (i.e. accrued vacation, uncleared construction indirects, system enhancements, etc.)
	O&M	O&M-Corrective Maint	Program or non-program O&M costs associated with the unplanned repair and maintenance of the system, which may or may not be scheduled. This excludes any capital work resulting from corrective maintenance.
	O&M	O&M-Operations	O&M costs associated with the activities related to managing and directing the operations of the company
	O&M	O&M-Preventive Maint	Program or non-program O&M costs associated with the planned repair and maintenance of the system, which may or may not be scheduled.
	Vegetation	VEG-Veg Mgmt-Planned	Costs associated with a planned tree trimming and vegetation management program
	Vegetation	VEG-Veg Mgmt-Unplanl	Costs associated with an unplanned tree trimming and vegetation management program.
"A" Value Added	Facility	FAC-Facility-Corp	Costs associated with corporate facilities projects. Includes all costs at main GO facilities related to structures and improvements, costs for furniture, equipment, roofing, landscaping, paving, electrical and HVAC.
	Facility	FAC-Facility-Regon	Costs associated with regional facilities projects. Includes all costs at regional locations related to structures and improvements, costs for furniture, equipment, roofing, landscaping, paving, electrical and HVAC.
	Jobbing & Contracting	J&C-Jobbing & Contrc	For profit work associated with customer work either generated internally or requested specifically by customers. This is expense and not Capital work.
	Tools	Tool-Tools & Equip	Capital or O&M expenses associated with the purchase and upkeep of tools and work equipment. This also includes transportation tools and equipment.
	Billable	BL-NonCap-Mutual Stm	Billable costs associated with assisting other utilities as a result of weather-related conditions. Settlement rule should be 186001.

- The project's economic dimensions (cost, expected revenue, etc.) are captured and summarized in the Capital Analysis and Risk Tool (CART) system.
- The best alternative is then determined to be an "accepted" solution by the local planning staff.
- The Company's planning staff noted that before 2005 there was a rudimentary risk assessment conducted with each project. In 2006, the Company set out to enhance and further standardize its risk assessment process and made an effort to automate these standards in software tools. The company currently uses a standardized *Impact* and *Likelihood* approach to measure risk as presented in Figure 8-7 below.

Figure 8-7
Risk (Impact and Likelihood) Definition Standards



	0	1	2	3	Rating
Impact					
Loss Avoidance					
Description, financial impact	$0 to $100k	$100k to $1M	$1M to $5M	More than $5M	0.0
"realistic worst case" (rules of thumb)					
Regulatory Impact =	$200,000 per minute SAIDI increase				
O&M Expense =	$0.625 per customer per hour				
Revenue Impact (Tariff) =	$0.070 per customer per hour (T&D)				
Other Expense =	$0 Special Equipment, Contract Labor, Contract Penalties, etc.				
Non-Financial Impact					
Safety	No impact reducing potential exposures or improving safety performance	Minimal impact reducing potential exposures or improving safety performance	Moderate impact reducing potential exposures or improving safety performance	Current violation of OSHA and/or NERC	> Max
Public/Regulatory	No Impact	Minor Impact (locally)	Moderate Impact (PUC Reporting)	Significant Impact (Regional Action)	0.0
Customer Impact	No Impact	0-2,500 Local	2,500-10,000 PUC Notification	>10,000 Major Outage	> Avg
Outage Duration	< 1 Hour	> 1 Hour < 8 Hours	> 8 Hours < 24 Hours	> 24 Hours	0.0 > Avg > Max 0.0
				Impact Score =	0.0
Likelihood					
Application/ Asset Performance					
Performance history	No Issue	Minor Issues (Sporadic)	Minor Issues (Increasing Trend)	>1 Major Perf. Issue	Avg
Life expectancy	New - long term life expectancy	Component is beyond life expectancy - maintainable	Component is beyond life expectancy - non maintainable	Definitive signs of imminent failure within one year	0.0
Asset Utilization					
Asset Utilization	Within nameplate rating	Over nameplate rating (Flat Trend)	Over nameplate rating (Increasing Trend)	Exceeding Moderate Loss of Life	0.0
				Likelihood Score =	0.0

- Under the normal, annual planning cycle, the "accepted" solutions enter a formal, multi-level review process that ultimately results in an approval, deferral, or rejection of the proposed RPA. If the RPA is approved, the associated capital expenditure will become a component of the CEI capital budget. The current review process includes the following levels:
  - A *Peer Review* by the CEI planning staff to ensure that options are exhaustively and correctly technically analyzed,
  - An *Operating Company Review* that in the past (pre-2006) has been composed as an assessment by Regional Directors; it has recently (2006) been expanded to include operating company officers,
  - An FE *Corporate Portfolio* review that is also performed by a Capital Review Committee of leaders across the FirstEnergy system.
- The primary output of this multi-phased approach is a project ranking or prioritization. This process ranks the discretionary spending based on system impact and risk.
- Periodically throughout the year, unplanned or materially revised RPAs will reenter this assessment process and will be addressed on an exception basis.
- Throughout the year, approved projects are begun after authorization when construction activities must be initiated according to construction plan. These projects are commissioned in the SAP system through the definition of the *Work Breakdown Structure* (WBS).
  - Prior to 2007, these projects were assigned to the respective construction management professionals (in Lines, Substations, etc.) for management and implementation. Then and now, project and schedule results are monitored monthly through the CEI Project Status Update Meeting, and a project-level review of all active projects is performed with particular focus on the summer-critical projects addressing high risk issues.

- In 2006, the Company initiated a monthly *Capital Allocation Meeting* (CAM) to more actively monitor and manage the execution of the capital expenditure plan; and as such is a detailed review of variance reports and changes to the plan.

Our overall assessment of CEI's capital planning and prioritization *processes* can be summarized in the following way:

- CEI's processes during the past few years have exhibited many of the attributes that constitute a sound planning and prioritization process. They are holistic and need-/issue-driven. The Company and FirstEnergy overall have made efforts to standardize key elements in the issue identification, project classification, and risk definition steps. Such standardization allows for automation, record keeping, and consistency of decisions.
- CEI's risk assessment scoring process could be currently described as adequate and consistent with industry standards and practices. It has a strong, reliability-focused *Impact* measurement structure. However, the risk assessment could be enhanced by adding a probabilistic (rather than a substantially qualitative) estimate of the *Likelihood* measurement dimension. This is a recently added element in the planning process and should improve its overall effectiveness.
- Since approximately the year 2000, many major U.S.-based investor-owned utilities (of a size and scope similar to CEI and FirstEnergy) have made significant improvements in their capital planning processes and tools to realize the characteristics outlined in the opening paragraphs of this section. To date, FirstEnergy and CEI could be best be described as making adequate but by no means industry-leading progress in these areas.
- Implementing industry best practices would lead to the development of integrated systems to link the investment evaluation process and subsequent prioritization and funding to overall strategy and risk mitigation. In applying an approach that disaggregates the investment decision from resource utilization considerations, CEI will make significant strides in the area of Asset Management.
- One noteworthy element that relates to these capital-related processes is CEI's implementation of a Capital Prioritization process (this project was inaugurated during the 2nd quarter 2007 just as this assessment was initiated). The approach and toolset (one of several available in the marketplace) has been developed over multiple years with numerous other large, investor-owned electric utilities. Consequently, it is a proven approach, embodies many of the industry's leading practices, and should expedite the Company's development in these areas.

8.5 Capital Processes Integrity

Our assessment of the *integrity* of CEI's capital-related business processes has been focused on whether these processes have been implemented as they are designed. This assessment would ideally have multiple dimensions, specifically:

- Does CEI, in fact, execute the planning processes as they are designed?
- Are the capital plans implemented as they are planned (i.e. – did "approved" projects actually get built and on what schedule)?
- Are the inevitable changes to the plan (due to external events, new information, new priorities/issues, etc.) handled in a way that is consistent with all other investments?

From our interviews and a review of CEI's records related to the Company's capital planning and prioritization processes, it is apparent that the processes as described by

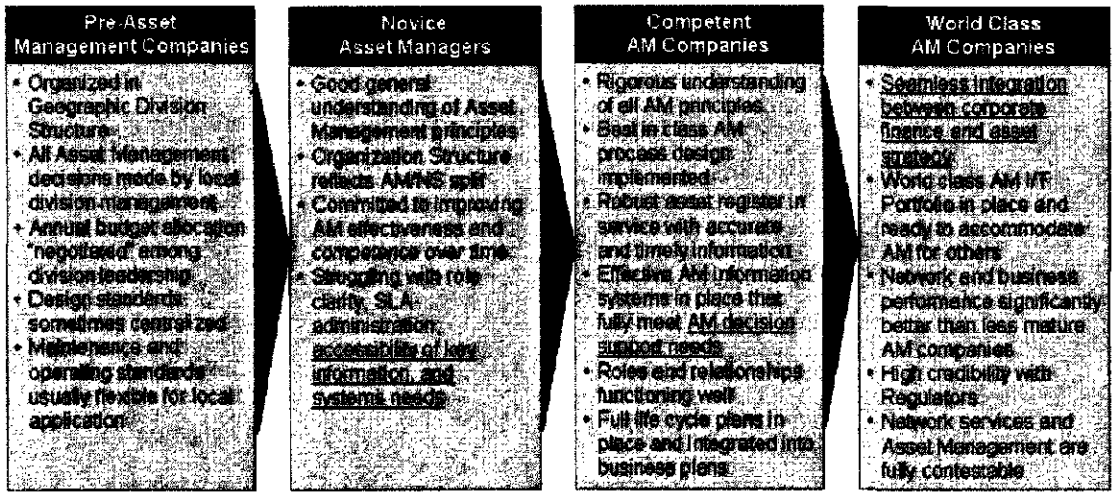
company's management and technical team are being implemented as intended. These processes have high visibility and a large number of participants in all of the varying process stages defined above. There is an appropriate documentary trail to support that its conclusions and actions are implemented as planned.

At the present time the Company lacks a rigorous data relationship capability between the RPA database (a Lotus Notes application) and the SAP system (which tracks actual project activity). Although such conditions are less than ideal, they are also not uncommon given the complexity of maintaining interfaces between enterprise-based transaction systems (such as SAP) and active, Company-developed planning tools (such as the RPA system).

Consequently, it is not possible to easily track and report "end-to-end" the performance of all RPAs through construction and completion (or deferral) in an automated way. Ideally, our analysis would have included an assessment to test whether the capital plans as approved from the RPA database were implemented (wholly or partially) as they are planned in SAP (i.e. – did "approved" projects actually get built and on what schedule)? Similarly, we also would have checked the process "in reverse", to determine that all projects that were constructed do indeed tie rigorously to an RPA (or not). At the present time such an assessment is not available in an automated way.

In independent assessments such as this study, we are frequently challenged to assess an organization's overall Asset Management capability (our frame of reference is our global experience with utilities, not solely a U.S. perspective). The technology-related information issues noted above are a critical dimension of this assessment. Figure 8-8 below highlights a perspective on the typical evolution that organizations follow as they transform to an Asset Management model:

Figure 8-8
Typical Evolution of Asset Management Capabilities



As it applies to the IT-related elements of the Company's capital planning and prioritization processes, CEI would generally fall in the novice / competent categories (based on a global scale of reference). The Company does have solid planning tools (RPA database, CART system, SAP) and is implementing new and better one (e.g. the

Navigant Consulting model), however data accessibility and more importantly data integration are weak. This is not an unusual condition for U.S.-based electric utilities.

CEI acknowledges at various levels in the organization the need to make better ex-post assessments of the actual impact of specific investments and use these assessments as key inputs to the project / alternative design process. This awareness is a critical first step toward defining the requirements and realizing the benefits of such information systems capabilities – which typically have a strong emphasis on data and systems integration.

This information improvement issue is one of the stated objectives of the Company's current *Asset Management* initiative, achievement of which will likely not occur until 2008 and beyond.

8.6 Asset Management Initiative

In late 2006 FirstEnergy initiated an Asset Management (AM) initiative aimed at improving the effectiveness of its capital investment programs, both in terms of how projects are selected and approved and how projects are managed in implementation. Given the 10-year perspective of this assessment, the implementation of this AM initiative at CEI will have a very important effect on the Company's ability to improve reliability especially in the context of the aging infrastructure challenges facing First Energy (and many other U.S. utilities).

The focus on this FirstEnergy-wide AM initiative has been to enhance how projects are managed and improve the quality of asset-related information and decision-making. It has included new organizational elements at both the holding company (FirstEnergy) and operating company (CEI) levels. CEI's AM function reports to the President of CEI and also has a matrix reporting relationship to the FirstEnergy Vice President – Asset Oversight. It will also include the implementation of new business processes and tools (noted above).

The CEI Director of Asset Management is the primary CEI manager responsible for implementing this initiative. There are 3 managers who report to the Director of Asset Management, responsible for the following three AM functions:

- **Project Management** - The project management responsibilities are focused on the timely, cost-effective, and safe implementation of the capital work program.
- **Portfolio Management** – This represents the continuing process of managing all of the Company's capital projects in the context of the overall schedule and budget. Project status and cost data is updated bi-weekly and this enables monthly reporting for the entire Company's capital project portfolio relative to budget and plan.
- **Asset Strategy** – This includes the implementation of 10 newly created positions known as Circuit Reliability Coordinators (CRCs) at CEI (FirstEnergy is implementing 70 such positions around the FirstEnergy system). CRCs will be responsible for circuit level asset history and analysis, data management and standardization, monitoring circuit-level reliability performance, and formulating projects and programs as they relate to their responsible circuits. The Company's vision is that these CRCs will be the "owners" of these circuits, with a strong sense of responsibility for their reliability performance, and will coordinate the investment projects related to their respective circuits through the necessary inspection, technical analysis, and financial / budgeting processes.

The company has a parallel corporate and operating company organizational structure. The operating company managers and director (noted above) are responsible for the implementation of these functions within CEI; the parallel corporate role is the Company's overall process owner and its manager is responsible for standardization of systems, processes, and tools across the First Energy system

FirstEnergy's corporate Asset Management leadership team has expressly recognized (and is actively managing) three primary challenges related to its Asset Management initiative. These include

- **Timing** – The FirstEnergy leadership team has set an aggressive time line to initiate the Asset Management initiative, especially as it relates to implementing the capital prioritization process and the hiring of CRCs. This is a major organizational change, with many new roles and interfaces between new participants and existing business processes and roles.
- **System Knowledge / Root Cause Analysis** - The Company is actively seeking ways to improve its ability to conduct "root cause analysis" of reliability issues. The AM leadership appropriately recognizes that this is a foundational element of improving asset-related investment decisions and will also be closely linked to the quality of the Company's asset data (see below).
- **Asset Data / Information** – FirstEnergy is seeking to become far more "predictive" (rather than "reactive") to asset failure patterns and far more accurate in the estimation of impact or benefit of system investments. A key element necessary to achieve these objectives is improved asset information (age, condition, failure patterns, loadings, etc.). This need is one of the driving factors behind the design of the new CRC role.

We generally concur with the Company's goals for the Asset Management initiative. Our observations related to this area were that the CEI executive management and FirstEnergy corporate AM leadership team have strong and clear views of scope, approach, and implementation of the AM initiative.

However, at the CEI staff level we noted uncertainty among departments about new or changed roles, responsibilities, and process interfaces (e.g. the role of CRCs v. existing inspections, the technical qualifications and expectations of the CRCs, etc.). Such uncertainty in the early stages of a major operating change is not unusual and is not yet a source of major concern. Moreover, as noted in Figure 8-8 above, we note that this struggle for "role clarity" is a very common characteristic of early stage AM transformations.

Our overall interpretation of the Company's Asset Management initiative in the context of this reliability assessment is straightforward – we believe it absolutely represents the greatest opportunity for the Company to make rapid, cost-effective, and truly sustained improvement in electric system reliability. At the same time, we also believe it represents perhaps the single greatest risk to overall system reliability because of the potential uncertainties created by any major organization restructuring and new processes.

Figure 8-9 below summarizes some of the major risks and opportunities that CEI will face as it develops its Asset Management organization:

Figure 8-9
Opportunities & Risks of First Energy's Asset Management Initiative

Opportunity	Risk
FirstEnergy-wide "best thinking" and "best practices" applied to the CEI system	Local technical and reliability expertise is diminished by a strong centralizing reorganization
Economies of scale related to asset data analysis, systems & tools, and equipment purchases	Unnecessary data collection not linked to key asset reliability decisions
Circuit Health Coordinators (CRCs) with strong, local accountability for circuit performance.	Inadequate skills and qualifications of CRCs in a critical role; diminished sense of accountability in other departments
Vastly improved asset data and inspection performance.	Uncertain or unclear organizational relationships for or interfaces with new functions

This initiative is simply in too early a stage to make any formal assessment of its effectiveness or impact on CEI's overall reliability. However, we recommend that this initiative be actively monitored for impact and effectiveness in the next 12-24 months.

8.7 Summary of Recommendations

The following specific recommendations are submitted to the Company related to its capital expenditure processes, spending levels, and methods.

CE-1	Sustain Planned Spending Levels for the 2008-2012 Period

Discussion

The Company's current targeted spending levels over the next several years (as described above) will be at a level well above its historic average and above industry patterns. This capital spending level will enable the company to address the recommendations outlined in this report and should be adequate to realize the objective of sustained reliability improvement for the next 10 years. The key challenge for the Company will be to sustain the overall capital expenditure level and to ensure that Reliability-related expenditures are not materially diverted to other capital obligations.

CE-2	Monitor the Performance and Effectiveness of the Asset Management Initiative

Discussion

As noted, the Asset Management initiative offers the Company its greatest potential opportunity and its greatest risk with regard to sustained reliability improvement. We encourage the Company to continuously monitor the effectiveness of this program with a special focus on the key risks outlined in Figure 8-9 above.

9.0 2005 ESS Rule 10 Action Plan Compliance Review

9.1 Purpose, Scope, and Approach for this Section

The purpose of this section is summarize our evaluation of the Illuminating Company's (CEI's or the Company's) compliance with each provision of its 2005 ESSS Rule 10 Action Plan to determine whether CEI's missed its interim reliability targets due to non-implementation of the Action Plan items.

The Action Plan was presented to UMS Group as Exhibit A in the Company's original Request for Proposal (RFP) specification and this Exhibit (presented below) serves as the frame work for organizing our assessment. For each element of the Action Plan as presented in the Exhibit, we will:

1. Assess CEI's overall compliance with the Action Plan item.
2. Summarize CEI's overall performance in the item and direct the reader to additional specific references to CEI's performance as characterized in this report. All of the items noted in this action plan have been evaluated as part of our overall Reliability Assessment Framework. As such, our detailed assessment is noted in other sections of this report.
3. Summarize our interpretation of the impact of CEI's compliance (or non-compliance, as appropriate) on the Company's failure to meet the reliability targets.

9.2 Provisions of the ESS 2005 Rule 10 Action Plan

The Action Plan can be summarized as follows:

Figure 9-1
Exhibit A from FirstEnergy RFP

CEI 2005 ESSS Rule 10 Action Plan 4901:1-10-10(C)(2)

Index missed	Factors contributing to the miss	Individually list action taken or planned to be taken for each factor to improve performance	Estimated cost to be incurred for each action in plan	Completion date or scheduled completion date for each action
CAIDI and SAIDI	Outages to large number of customers	In addition to traditional substation employees, the First Responder Program utilizes non-traditional employees, such as mechanics, operation supervisors and office technical personnel to respond to substation and circuit outages. Employees are notified by e-page. The intent is to quickly get trained personnel, who work or live nearby affected substations, to assist CEI dispatching personnel in identifying the problem and restore service. For 2005, we will expand this process to include additional employees, conduct additional training and qualification testing, and re-emphasize management expectations for area responsibility and expedient response.	$125,000	7/31/05

CAIDI and SAIDI	Outages to large number of customers	CEI will implement additional work shifts and schedule changes to achieve increased afternoon coverage by line and substation crews.		5/31/05
CAIDI and SAIDI	Outages to large number of customers	CEI is implementing management review of circuit lockouts with restoration times greater than 60 minutes. These outages affect larger blocks of customers and have a significant impact on CAIDI.		3/31/05
CAIDI and SAIDI	Outages to large number of customers	In-depth management review of inoperable equipment on a weekly basis. Equipment out of service results in abnormal system configurations. If another outage occurs during these temporary abnormal configurations, longer duration outages are possible. In addition to prompt repair of all inoperable equipment, prioritization will be used to assure equipment that may affect the largest amount of customers for the next contingency is repaired first.		3/31/05
CAIDI and SAIDI	Outages to large number of customers	Metrics are being established to measure the dispatching/trouble crew response effectiveness to outages.		6/30/05
CAIDI and SAIDI	Outages to large number of customers	Management is proactively monitoring weather fronts and activating the CEI storm process. Specifically line, metering, substation, underground and office personnel are held on duty in advance of the storm. This practice was initiated during the second half of 2004		3/31/05
CAIDI and SAIDI	Outages to large number of customers	Overtime staffing for service restoration is being reviewed and different methods are being evaluated to increase staffing		6/30/05
SAIFI, CAIDI and SAIDI	Reduce outages due to lightning	An instantaneous relay trip (fuse save mode) is being evaluated for 50% of the 13kV circuits beginning the second quarter of 2005. Based upon results of this review, instantaneous tripping may be initiated and have an impact on improving SAIFI and CAIDI.	$150,000	9/30/05
CAIDI and SAIDI	Outages to large number of customers	Fault indicators have been installed at 170 locations on the 13kV system. The remaining 130 locations are scheduled to be accelerated and installed by the third quarter of 2005. Faults on 13kV circuits have a high contribution to CAIDI. Installation of the fault indicators helps locate the direction of the fault, thus aiding in sectionalizing the feeder and more rapidly restoring large blocks of customers.	$50,000	9/30/05
SAIFI, CAIDI and SAIDI	Isolating outages will reduce customer minutes	Single-phase units are replacing distribution three-phase line reclosers as the three-phase devices are pulled for maintenance. The change-out is accelerated if required for specific reliability work. Three-phase re-closers trip (open) all three phases for single-phase faults. Single-phase units trip the faulted phase only, thus impacting only one third of the customers. Five locations will be changed out in 2005.	$75,000	9/30/05

SAIFI, CAIDI and SAIDI	Large subtransmission supply outages	36kV sectionalizing and SCADA controlled switching has been installed at seven locations. Four additional locations will be installed in 2005. These devices will isolate faults and improve restoration efforts.	$240,000	12/31/05
SAIFI, CAIDI and SAIDI	Lengthy outages for a large number of customers	Automatic bus tie closing projects will be completed at five 13kV substations	$200,000	10/31/05
SAIFI and SAIDI	VSA circuit breaker failures	To date, 220 VSA reclosers have been identified as part of the shunt kit replacement program. A total of 164 reclosers have been retrofitted. The remaining 56 reclosers will be retrofitted by the fourth quarter of 2005. Failure of VSA reclosers to isolate individual circuit faults has resulted in total substation bank shutdowns affecting multiple circuits. Through our analysis and working with the manufacturer, the problem has been addressed with the retrofit program.	$150,000	12/31/05
CAIDI and SAIDI	Reduce long outages	Upgrade/conversion work will be completed on six 4kV circuits; Additional 4kV upgrade/conversion work (approximately 10 circuits)	$1,500,000 $5,000,000	12/31/05 12/31/06
SAIFI and SAIDI	Cable failures	An underground VLF (Very Low Frequency) tester was purchased in January 2005. The VLF tester enables us to detect problems with the cable, splices and terminations that may lead to a future cable fault. We plan to begin testing our underground feeder exit cables with the VLF tester in March. Approximately 15 miles of underground cable is scheduled for replacement in 2005.	$75,000	12/31/05
SAIFI and SAIDI	Large area subtransmission supply outages	Replace wood poles and cross-arms on four 36kV circuits	$550,000	12/31/05

9.3 CEI's Compliance ESS 2005 Rule 10 Action Plan

The following subsections refer to each specific item in the 2005 Rule 10 Action Plan noted in Figure 9-1 above.

9.3.1 First Responder Program

The company has implemented the First Responder program and has evidence that it has improved the outage response in substation events. Section 6.4.1 of this report presents a detailed assessment of this program. The specific CAIDI measurement of the actual impact of this program is difficult to measure, but the "extra eyes and ears" it provides offers dispatchers timely information to expedite the deployment of additional resources as needed.

9.3.2 Additional Shifts (Afternoon, etc.)

The company has altered operational staffing to add staff coverage during the afternoon and evening hours. Section 6.4.1 of this report noted the significant, measurable improvement in CAIDI performance from this alternative shift. Figure 6-9

notes the improvement in the afternoon and evening hours has made since this program has been implemented, cutting the average duration 25-40% during this time of day relative to 2004-era performance.

9.3.3 Management Review of Lockouts

Monitoring, review, and analysis of circuit breaker lockouts is an integral part of the company's continuous reliability analysis and the reporting of lockouts is part of the monthly reliability analysis and meeting. Section 7.3.3 of this report make note that the effectiveness of the monthly review process.

9.3.4 Management Review of Inoperable Equipment

The Company has implemented this program as planned. It maintains an database of inoperable equipment in Lotus Notes and it is actively monitored and managed by the leadership team and by the Operations and Dispatch functions. The Company has set policies on response priorities related to this list.

Based on the results of our review of Company's infrastructure and inspection processes (Section 2), this item is properly administered. We note that in the June Reliability Report there was some incorrect data that had a reliability impact (Grant Substation event), although we observe no evidence that this is a widespread problem.

9.3.5 Management Monitoring of Weather

The company has implemented a program to significantly improve its weather monitoring and pre-storm mobilization. Section 6.4.1 of this report highlights the detailed actions the company has taken regarding this item. Figure 6-5 and Figure 6-6 have noted that this effort has been successful at reducing the duration of outages in storm conditions. Our recommendations encourage the Company to expand and systematize this initiative.

9.3.6 Overtime and Additional Staffing

The Company has employed all of the leading industry practices with respect to staffing (e.g. alternate shift, first responder program, call-out process, extending shifts), with discernment on balancing the inherent efficiencies of extending shifts with proper attention to remaining within time parameters (length of work day, rest periods, etc.) relating to employee safety. A sampling of overtime profiles in June (selected as it represents the convergence of completing summer critical jobs, storm season, assimilation of first half inspection results, and the start of new business related activity) indicated an approximate overall 20 percent factor across the Operations Services and Operations Support organizations. This is considered reasonable, given the timing (peak activity period). Obviously, as the Company institutes the accelerated hiring program recommended in Section 7.0, these percentages will decrease.

9.3.7 Analysis of Instantaneous Trip of Relays

The Company has implemented this action item. Section 5.2.3 of this report provides an extensive discussion. At present CEI has the instantaneous trip set on all 398 13kV circuits except for 33 circuits in which the instant trip had been set but was disabled due to concern over customer complaints about excessive momentaries. We have recommended that the instant trip and timed re-close be evaluated on a case-by-case basis based on considerations such as whether the feeder is virtually all underground (e.g., the 11kV system) and whether re-closing is likely to be successful due to clearing of a temporary fault.

9.3.8 Installation of Fault Indicators

Fault indicators were installed at 170 locations on the 13kV system in the first half on 2005 with the remaining 130 locations accelerated and installed in the second half on 2005. These indicators have been installed at the feed point cable poles of the 13kV system. They are designed to help locate the direction of the fault, thus aiding in sectionalizing the feeder and more rapidly restoring large blocks of customers. This program was expanded after 2005 to include 100 additional locations on the 4kV system.

9.3.9 Isolating outages to reduce CMI (Single Phase Reclosers)

The three-phase units were intended to be changed-out as they are maintained or required for specific reliability work. CEI completed a total of 9 site replacements in 2006, including the 5 locations committed to the PUCO for 2005.

9.3.10 Large subtransmission supply outages (Sectionalizing)

The Company has been in compliance on this Action Plan and it has yielded outstanding results. Section 3.4.1 of this report notes that as a result of these actions the sub-transmission related minutes of interruption have fallen to their lower relative level since 2001. Figure 3-6 in Section 3 highlights these results and offers related commentary of these improvements.

9.3.11 Lengthy outages for a large number of customers (Bus Ties)

The Company has implemented the corresponding Bus Tie initiative in the targeted substations. The Company actively monitors the performance of these devices as part of the ongoing reliability analysis and Monthly Reliability report and briefing.

9.3.12 VSA circuit breaker failures

These VSA breakers have been retrofitted and the corresponding failure pattern has been mitigated.

9.3.13 Reduce long outages (4kv Upgrade Work)

The 2005 4kV upgrade work of six circuits was completed in 2006. Six of the ten circuits scheduled for upgrade work in 2006 have been completed in 2007. The balance of the work has been temporarily deferred, primarily as a result of contractor availability. The Company has conducted the preparatory work (vegetation management) on all of the circuits and has noted measurable reliability improvement on both the upgraded and original portions of the network for these circuits.

9.3.14 Cable failures (VLF Testing and Replacement

The Company has implemented this Action Plan and realized some successful reliability improvement. Section 5.5 of this report provides a summary of these actions and its impact. We noted that recommendation SI-7 in our report suggests the Company continue this initiative on a wider population of exit cables with high level of attention paid to the cost-effectiveness of each replacement candidate.

9.3.15 Large area subtransmission supply outages (Pole Replacement)

The Company has been in compliance on this Action Plan and it has yielded reliability improvement results. Section 3.4.1 of this report notes that as a result of these actions the transmission related minutes of interruption have returned to (normal) relative level 2002. Figure 3-6 in Section 3 highlights these results and offers related commentary of these improvements.

Figure 9-2 below is a table that summarizes the Compliance with the 2005 ESS Action Plan and its overall impact on reliability.

Figure 9-2
Summary of 2005 ESS Action Plan Compliance and Impact

Item	Compliance	Impact Summary
First Responder Program	Yes	This Is an effective effort that should be emulated by other utilities.
Additional Shifts (Afternoon, etc.)	Yes	Excellent, measurable improvement in outage duration during the new shift hours. This has been a very effective program.
Management Review of Lockouts	Yes	Effective.
Management Review of Inoperable Equipment	Yes	Effective. The Company should have continued diligence in its accuracy.
Management Monitoring of Weather	Yes	Measurable improvement in CAIDI in storm conditions.
Overtime and Additional Staffing	Yes	Improving with the implementation of other staffing initiatives
Analysis of Instantaneous Trip of Relays	Yes	Improvements have been realized. We offer recommendations for continued analysis of the instantaneous trip in selected locations
Installation of Fault Indicators	Yes	These devices have been installed and the program was expanded after 2005 to include elements of the 4kv system.
Isolating outages will reduce customer minutes (single phase reclosers)	No	The 2005 commitment of 5 devices was deferred to 2006 and then exceeded as 9 devices were installed
Large subtransmission supply outages (sectionalizing)	Yes	Excellent results. Sub-transmission SAIFI at it lowest relative level in 5 years.
Lengthy outages for a large number of customers (bus ties)	Yes	Installed and actively monitored.
VSA circuit breaker failures	Yes	Improvement realized.
Reduce long outages (4kV Upgrade)	Delayed and partially deferred	All of the preparatory work a majority of the upgrade work has been completed (but delayed). Measurable reliability improvements have been realized.
Cable failures (VLF)	Yes	Improvement to date noted. We recommend continued, selective testing to identify cost-effective replacement candidates.

Large area subtransmission supply outages (Pole Replacement 36Kv)	Yes	Results realized. Transmission SAIFI has returned to a proper level from its 2003-4 era peak.

10.0 Appendix

10.1 RFP to Final Report Cross Reference

RFP Reference		Report Section Reference
Area	Topic	
1.3 b	Assessment of Distribution Infrastructure	Section 2.0
1.3 c	Assessment of Capital Improvement Process	Section 8.0
1.3 d	Assessment of Maintenance Practices	Sections 2.4.3; 5.2.2; 5.3.4; 5.4.2 and 7.3.2
1.3 e	Assessment of Organization and Staffing	Section 7.0
1.3 f	Assessment of Outage Management	Section 6.0
1.3 g	Assessment of Costs	Section 1.0
1.3 h	Other Topics	
1.3 h(1)	Compliance with 2005 ESSS Rule 10 Action Plan	Section 9.0
1.3 h(2)	Geographic Area Review	Sections 3.4.2; 6.3; and 7.3.2
1.3 h(3)	New Technologies (Distribution Automation and Adaptive Relaying)	Section 5.2.3

10.2 List of Data References

ID	DESCRIPTION	PURPOSE
UMS-001	Electronic Copy of Presentation Package	Basic CEI System Information (Org. Charts, Demographics)
UMS-002	5-YRS of OMS Data	Reliability Analysis and Selection of 15 CKT/3 Substations
UMS-003	Vegetation Management Program Description	Reliability Analysis/Requested for July 11th
UMS-004	Worst Circuit Program Description	Reliability Analysis/Requested for July 11th
UMS-005	Animal Guarding Program	Reliability Analysis/Requested for July 11th
UMS-006	Lightning Protection Program Description	Reliability Analysis/Requested for July 11th
UMS-007	Substation IM&T Preferred Practices	Distribution Infrastructure and Maintenance Practices Assessment (Pending Selection prior to July 6th)
UMS-008	Circuit/Line IM&T Preferred Practices	Distribution Infrastructure and Maintenance Practices Assessment
UMS-009	Equipment IM&T Preferred Practices	Distribution Infrastructure and Maintenance Practices Assessment
UMS-010	Corrective Maintenance Policies/ Procedures/Practices	Distribution Infrastructure and Maintenance Practices Assessment
UMS-011	Inventory of Assets for the 3 Substations Targeted for Inspection	Distribution Infrastructure and Maintenance Practices Assessment (Pending Selection prior to July 6th)
UMS-012	Most Recent Line Inspection Reports for the 15 Circuits Targeted for Inspection	Distribution Infrastructure and Maintenance Practices Assessment (Pending Selection prior to July 6th)
UMS-013	High Level Map (Transmission and Substation Level) indicating District Boundaries	General System and Company Information (Suggest Copy of Map we reviewed at CEI Offices)
UMS-014	CEI ED Asset Summary	General System and Company Information
UMS-015	2006 and Most Recent Quarterly Service Reliability Report	General System and Company Information
UMS-016	Results of Most Recent Customer Satisfaction Survey	General System and Company Information
UMS-017	Description of IT Platforms used to Manage Distribution Assets	General System and Company Information
UMS-018	CEI Distribution System Assessment and Future Outlook (Long Term Plan)	General System and Company Information
UMS-019	Most Recent Commissioners Meeting Presentation	General System and Company Information
UMS-020	Most Recent Annual Compliance Report re: Reliability	General System and Company Information
UMS-021	CEI Performance Dashboard Report and EOY 2006 Performance Metrics	General System and Company Information
UMS-022	Description of CEI Electrical System (Demographics and Assets by Line and Substation District Offices)	General System and Company Information
UMS-023	Substation ID by Number	Aid in correlating CKT numbering system with that provided to PUCO

ID	DESCRIPTION	PURPOSE
UMS-024	Explanation of Minutes on sub-cause code U (Subtransmission)	Refer to e-mail of 7/5/2007
UMS-025	Wood Pole Inspection Reports for 15 CKTS being inspected	Distribution Infrastructure Assessment
UMS-026	Recloser Inspection Reports for 15 CKTS being inspected	Distribution Infrastructure Assessment
UMS-027	Most Recent Substation Inspection Reports for the 3 Substations being inspected	Distribution Infrastructure Assessment
UMS-028	Remote Controlled Switch Inspection Reports for Targeted Inspections	Distribution Infrastructure Assessment
UMS-029	Corrective Maintenance EOY Backlog (by Substation District Office) (3 YRS) (No. and HRS)	Maintenance Practices Assessment
UMS-030	Corrective Maintenance EOY Backlog (by Line District) (3 YRS) (No, and HRS)	Maintenance Practices Assessment
UMS-031	PM Performance (EOY for 3 YRS) (% Based on No. and Planned HRS)	Maintenance Practices Assessment
UMS-032	CEI Maintenance Prioritization Process (Incorporate into CM EOY and PM EOY Backlog)	Maintenance Practices Assessment
UMS-033	OMS System Manual and Procedures	Reliability Analysis
UMS-034	Worst Circuit List	Reliability Analysis
UMS-035	Worst Devices List	Reliability Analysis
UMS-036	District Reliability Performance Report	Reliability Analysis
UMS-037	5-YRS Customer Count (by District)	Reliability Analysis
UMS-038	Switching Plans: To What Extent do the Exist/Where are they Maintained	Reliability Analysis
UMS-039	Call-Out Response (Average Time and PCNT Response by District	Outage Restoration Assessment
UMS-040	Staffing by District and Shift (include Age Demographics)	Organization and Staffing Assessment
UMS-041	Staffing by Substation District Office (include Age Demographics)	Organization and Staffing Assessment
UMS-042	Contractor Utilization (Staffing Profile, Type of Work, Location)	Organization and Staffing Assessment
UMS-043	CEI Overtime Profile (Line District, Substation Office, Position)	Organization and Staffing Assessment
UMS-044	Engineering Staffing Profile, Locations and Functions	Organization and Staffing Assessment
UMS-045	New Business in 2006, Projected in 2007 by Line COC/Include Response Times	Organization and Staffing Assessment

ID	DESCRIPTION	PURPOSE
UMS-046	Contracting Philosophy by Line District	Organization and Staffing Assessment
UMS-047	Vital Staffing Reports (Hiring Profile, Anticipated Attrition by Line/Substation District	Organization and Staffing Assessment
UMS-048	Key Statistics by Line District (Refer to Comments)	Organization and Staffing Assessment
UMS-049	Capital Budgeting and Prioritization Process Overview	Capital Improvement Process Assessment
UMS-050	Capital Spending (Planned and Actual for 2005 and 2006) (by Category and Individual Project)	Capital Improvement Process Assessment
UMS-051	Capital Budget for 2007 (Summarize Major Reliability Initiatives)	Capital Improvement Process Assessment
UMS-052	O&M Spending for 2005 and 2006 (Category/Highlight Major Reliability Programs)	Capital Improvement Process Assessment
UMS-053	O&M Budget for 2007 (by Category and Highlight Major Reliability Programs)	Capital Improvement Process Assessment
UMS-054	Explanation of Exclusions for OMS Reliability Information	Reliability Analysis
UMS-055	Monthly Reliability Meeting Presentation	Reliability Analysis
UMS-056	Osmose Technical Specification	Distribution Infrastructure Assessment
UMS-057	Guidelines for Inspection of Distribution Wood Poles for Decay	Distribution Infrastructure Assessment
UMS-058	Guidelines for Reinforcement of Wood Poles	Distribution Infrastructure Assessment
UMS-059	OH/UG Line Miles and Customers for all 13kV abd 4kV Circuits	Reliability Analysis
UMS-060	Asset Management Plan and/or Philosophy	Capital Improvement Process Assessment
UMS-061	Dispatcher Staffing Profile (with ages or years of experience)	Organization and Staffing Assessment
UMS-062	Network Cable Staffing Profile lwith Age Demographics)	Organization and Staffing Assessment
UMS-063	Cable System Presentation	Reliability Assessment
UMS-064	Line Inspection Status (as of 12/31/2006)	Organization and Staffing Assessment
UMS-065	Breakout of Capital Projects (Substation and Line/Internal and Contracted	Organization and Staffing Assessment
UMS-066	Storm Plan	Reliability Analysis
UMS-067	PSI Study (Per Discussion with Mark Julian)	Organization and Staffing Assessment
UMS-068	Circuit Study for Potential Sectionalizing	Reliability Analysis
UMS-069	2005/2006 Capital Budgeting Information (FERC Compatible)	Capital Improvement Process Assessment

10.3 List of Cleveland Electric Illuminating Company Staff Interviews

Cleveland Electric Illuminating Company Interview Participants	
Name	**Title / Responsibility**
Tracy Mayse	Manager, Substation Services (East)
Jim Sears	Director, Reliability
Tom Solanics	Supervisor, Engineering Services
Ron Kuczma	Manager, Substation Services (West)
Larry Oyler	Lineworker Leader (Miles)
Mike Zelenik	Line Leader Shift (Strongsville)
Pat Kelly	Lineworker Leader (Concord)
Frank Vanthoor	Line Leader Shift (Westlake)
Ray Hanzlik	Lines Manager (Mayfield and Solon)
Jim Forristal	Supervisor, Regional Operations Line (Mayfield)
Bill Robinson	Line Leader Shift (Ashtabula)
Stan Goodrich	Lineworker Leader (Mayfield)
Gwen Higaki	Director, Asset Management
Brian Larrick	Line Manager (Strongsville)
Darry Lindemann	Supervisor, Regional Operations Line (Shaker Heights)
John Skory	Director, Operations Support Services
Steve Miller	Advanced Engineer
Gerry Western	Manager, Forestry Services
Heinz Limmer	Manager, Lines (Concord)
Dan Bellmore	Manager, Dispatching
Matt Slagle	Manager, Underground Network
Tom Kopchick	Supervisor, Engineering
Dennis Chack	Regional President, Northern
Paula Sutkowski	Manager, ED Reg. Asset Strategy
Frank Dibbs	Manager, ED Reg. Projects and Portfolio
Mike Ferncez	Director, Operations Services
Doug Disterhof	Supervisor, Engineering Services
Nick Lizanich	Vice President, Asset Oversight
Tony Hurley	Director, ED Asset Management

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PUCO DR # 4 **The information contained herein is Confidential in accordance with R.C. 4901.16. Please do not disclose.**

1. Please explain in detail what is meant by the following statement found in Section A3.e of the Plan "the need to expend capital for equipment far earlier than before"? Additionally, how does this action relate to the Company's commitment stated in Section A3.g of the Plan?

2. For the following statement found in Section A3.e of the Plan "the need to replace components of an aging distribution system", please provide rationale as to why the Company believes that this action is different from its current and past capital investment plans and operation & maintenance practices. Additionally, how does this action relate to the Company's commitment stated in Section A3.g of the Plan?

3. Please describe the relationship between Rider DSI and CEI's commitment to maintain its capital spending (including transmission) at a minimum level of $84.7 million for at least five years (based on the first long-term recommendation on Page 32 of the UMS report). Include any implications for the other two operating companies.

4. Please describe the relationship between Rider DSI and CEI's commitment to establish and adhere to "Reliability-related" and capacity investments at levels, percentage-wise commensurate with those for 2007 (based on the second long-term recommendation on Page 32 of the UMS report). Include any implications for the other two operating companies.

5. Please describe the relationship between: (1) FE's commitment to spend at least $1 billion on distribution system investments during the years 2009 through 2013; and (2) the third long-term recommendation on Page 32 of the UMS report to develop a comprehensive plan to replace and/or refurbish the current electric distribution infrastructure. Include any implications for the other two operating companies.

6. For each of FE's Ohio operating companies, please provide total capital expenditures for distribution-related facilities (69 kV and below) for each of the years 2003 through 2007.

7. For each of the operating companies, please provide capital budget variance analysis [example to use Figure 8.3 of the UMS Report titled "2007 Focused Assessment of the Cleveland Electric Illuminating Company"] for years 2002 through 2008 year-to-date, by operating company, by year. At a minimum, please utilize all of the budget categories listed on the aforementioned Figure 8.3 when providing the requested capital budget variance analysis.

8. For each of the operating companies, please provide the capital budget [example to use Figure 8.3 of the UMS Report titled "2007 Focused Assessment of the

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Cleveland Electric Illuminating Company"] for years 2009 through 2013, by operating company, by year. At a minimum, please utilize all of the budget categories listed on Figure 8.3 of the UMS Report titled "2007 Focused Assessment of the Cleveland Electric Illuminating Company" when providing the requested capital budgets.

9. For each of the following Company capital budget categories listed below, please provide a listing of all major projects [$100,000 or greater] that are included in these budget categories within the Company's budget for each of the years 2009 through 2013, by operating company, by budget category, by year. For each major project listed, include the following: a project identification code, a description of the project [include size of facility], a description of the projects intended purpose [what does the Company plan to accomplish by completing the project], what part of the operating company's territory [location] is impacted, what quantifiable impact does the project have on SAIFI, what quantifiable impact does the project have on CAIDI, the project's budgeted dollar amount included in the budget for the year, total budgeted dollar amount for the completion of the project start-to-finish [multi-year projects], planned start date for each project, planned completion date for each project.

    a. Obsolete/Deteriorated Equipment
    b. Failures
    c. System Reinforcement
    d. Reliability
    e. New Load

10. For each of FE's Ohio operating companies, please provide a ranking of the top 10 categories in terms of capital-investment dollars spent during each of the years 2003 through 2007 including the expenditure amount associated with each category.

11. For each of FE's Ohio operating companies, please provide a ranking of the top 10 categories in terms of capital-investment dollars projected to be spent during each of the years 2009 through 2013 including the estimated expenditure amount associated with each category.

12. For each of FE's Ohio operating companies, please provide total capital expenditures for distribution-related facilities, including the proposed $1 billion capital investment plan (69 kV and below), that are budgeted, planned, or projected for each of the years 2009 through 2013.

13. Please provide a detailed description of how FE and its Ohio operating companies would decide which distribution capital projects would be implemented during the years 2009 through 2013 if Rider DSI were approved.

14. For each of the following operation and maintenance [O&M] expense categories listed below, please provide a comparison of budgeted dollars to actual dollars expensed for the years 2002 through 2008 year-to-date, by operating company, by

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O&M expense category, by year.

a. Operations Supervision and Engineering
b. Load Dispatching - Operations
c. Station – Operations
   i. Station Inspections
   ii. Other
d. Overhead Line – Operations
   i. Overhead Line Inspections
   ii. Overhead Equipment Inspections
   iii. Distribution Pole Inspections
   iv. Other
e. Street Lighting & Signal System - Operations
f. Meter Expense – Operations
g. Customer Installations – Operations
h. Miscellaneous – Operations
i. Rents – Operations
j. Maintenance Supervision and Engineering
k. Maintenance of Structures
l. Maintenance of Station Equipment
   i. Transformer Maintenance
   ii. Circuit Breaker Maintenance
   iii. Bus and Switchgear Maintenance
   iv. Capacitor Maintenance
   v. Relay Maintenance
   vi. Underground Exit Cable Maintenance
   vii. Conductor Maintenance
   viii. Station Lightning Arrester Maintenance
   ix. Vegetation Management
   x. Station Animal Mitigation
   xi. Other
m. Maintenance of Overhead Lines
   i. Vegetation Management
   ii. Recloser Maintenance
   iii. Switchgear Maintenance
   iv. Capacitor Maintenance
   v. Conductor Maintenance
   vi. Lightning Mitigation
   vii. Animal Mitigation
   viii. Cutout Maintenance
   ix. Insulator Maintenance
   x. Pole and Crossarm Maintenance
   xi. Regulator Maintenance
   xii. Other
n. Maintenance of Underground Lines
   i. Underground Conductor Maintenance
   ii. Padmount Transformer Maintenance

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iii. Switchgear Maintenance
iv. Station Exit Cable
v. Vegetation Management
vi. Other

o. Maintenance of Line Transformers
p. Maintenance of Street Lighting & Signal System
q. Maintenance of Meters
r. Maintenance of Miscellaneous Distribution Plant

15. For each of the following operation and maintenance [O&M] expense categories listed in Data Request 9 above [items a through r including sub-categories], please provide the dollar amounts budgeted for each category and sub-category for the years 2008 through 2013, by operating company, by O&M expense category and sub-category, by year. Staff understands that the Company does not directly budget O&M expenses in this manner but Staff believes the Company can provide this information.

16. Please provide an estimate of O&M savings (and the timing of such savings) expected to result from the $1 billion FE committed to invest in its distribution system during years 2009 through 2013.

17. Please describe the impact on each operating company's O&M expenses if Rider DSI is not approved.

18. For each of FE's Ohio operating companies, please provide estimated revenues from Rider DSI during each of the years 2009 through 2013.

19. Please describe the extent to which Rider DSI revenues would be utilized for transmission capital projects over 69 kV, and provide the estimated amount of such expenditures by operating company for each of the years 2009 through 2013.

20. Please describe (quantify) the extent to which Rider DSI revenues would be used to cover Distribution O&M expenses, describe the nature of such expenses, and explain how they are incremental to those in the test year for the pending rate case.

21. Please describe any FE controls to ensure that the Rider DSI revenues were actually spent on the projects and expense categories for which they were intended, that expenditures for such projects and expense categories are incremental, and that non-incremental (baseline) expenditure levels are maintained during the years 2009 through 2013.

22. Assuming that FE were to continue measuring reliability performance as it has in the past and that FE completed its commitment to spend $1 billion on distribution capital investments, please estimate each operating company's improvement on SAIFI and CAIDI comparing their year 2014 performance against its respective average for the 3 year period 2005 through 2007.

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23. For each of FE's Ohio operating companies, please provide the results of any reliability-related survey questions posed to customers during the years 2004 through 2008 (YTD-July), and include a copy of the survey instruments that were used.

24. Please describe the impact on each operating company's reliability if Rider DSI is not approved.

25. Please provide a detailed rationale for revising CEI's SAIDI target to 120 minutes including an explanation of how this revision is aligned with customer expectations.

26. How will this proposed revison to the SAIDI target impact the current CEI CAIDI and SAIFI targets?

27. In Donald R. Schneider's Testimony, he makes the following statement "I believe that 120 minutes represents the optimal reliability performance for CEI, and it provides an excellent value to customers when balancing reliability performance with the costs of achieving such reliability". Please provide the quantitative analysis that supports this statement.

28. Please describe how FE would react if any of the Ohio operating Companies' SAIDI performance were to exceed the upper limit of the performance band.

29. Please describe how FE would react if any of the Ohio operating Companies' SAIDI performance were to fall below the lower limit of the performance band. Include a discussion of how FE would dispose of the additional revenue from Rider DSI.

30. Please describe CEI's progress to date in implementing the short-term recommendations made by UMS in the report of its "2007 Focused Assessment," and discuss the likelihood that all of the short-term recommendations will be implemented by year-end 2008. In addition, please provide the impact these recommendations will have on CEI's CAIDI and SAIFI performance.

31. Please provide any information on the extent to which other electric utilities utilize a rear-lot-line adjustment to their reliability performance measurement and whether such an adjustment is recognized by applicable regulatory agencies.

32. Please provide the quantitative analysis that supports CEI's "Rear Lot Reduction Factor" of .5

33. Please list and describe any recommendations in UMS Report Sections 1.5.1 or 1.5.2 which CEI plans to implement during any of the years 2009 through 2013, include the cost of such implementation, the year of planned expenditure, and the respective amounts for capital and O&M. Also discuss the extent to which similar efforts are planned for OE and TE during that same time period, and if so planned,

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provide similar cost information.

34. Please describe any plans to adapt any aspects of the UMS report to the other two operating companies and how such plans relate to Rider DSI.

35. Please describe the relationship between Rider DSI and FE's plans to initiate an enhanced vegetation management program.

36. Please describe the relationship between Rider DSI and FE's commitment to accelerate hiring to facilitate the assimilation of new personnel in advance of anticipated attrition due to retirement (based on the fourth long-term recommendation on Page 32 of the UMS report). Include any implications for the other two operating companies.

37. For the following statement found in Section A3.e of the Plan "the need to train new employees to replace retirees", please provide rationale as to why the Company believes that the cost of training new employees to replace retirees is not included in current rates.

38. For each of the following employee categories, provide the actual number of full-time new hires that the Company experienced for each of the years 2000 through 2007 and 2008 year-to-date by operating company, by year, by category.

    a. Distribution Company Management
    b. Lineworkers
    c. Underground Electricians
    d. Underground Technicians
    e. Relay Technicians
    f. Engineers
    g. Dispatchers
    h. Circuit Reliability Coordinators

39. For each of the following employee categories, provide the projected number of full-time new hires Company plans to hire for each of the years 2008 through 2013 by operating company, by year, by category.

    a. Distribution Company Management
    b. Lineworkers
    c. Underground Electricians
    d. Underground Technicians
    e. Relay Technicians
    f. Engineers
    g. Dispatchers
    h. Circuit Reliability Coordinators

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Response:

1. In order to maintain historical reliability performance capital is needed far earlier than before in an attempt to replace equipment before it fails and to timely order equipment to ensure that the equipment is on site when needed.

2. In the past the equipment was newer and maintainable, and now it is older and is in need of more maintenance and in many cases replacement. The $1 billion capital commitment represents the Companies' minimum commitment to addressing this very large endeavor.

3. The DSI Rider was designed to improve the overall health and financial sustainability of the distribution business and to recognize and ensure the continued reliability of the distribution system. It is not a cost-based proposal to cover a single need, but rather is a high level recognition of what is needed to maintain the health and financial sustainability of each of the Companies going forward. The $84.7 million capital spend is based on the long-term recommendation of CEI's consultant report. As part of the Companies ESP, the Companies have committed to the $84.7 million spending level for CEI for the next five years. In total, the Companies have committed to make capital investments in their distribution systems in the aggregate of at least $1 billion, which includes the $84.7 million for the CEI system. The implication to the other two operating companies will be to share in some portion of the aggregate amount of $1 billion.

4. The reliability-related and capacity investments are part of the $84.7 million CEI commitment discussed above in PUCO – DR # 4 Q3 and are included in the $1 billion capital commitment. The implication to the other two operating companies will be to share in some portion of the aggregate amount of $1 billion.

5. The long-term consultant recommendation for CEI to develop a comprehensive plan to replace and / or refurbish the current electric distribution infrastructure is a work in progress. The $1 billion capital commitment contributes to the replacement and / or refurbishment of the Companies' systems.

6. Please see attachment PUCO-DR#4-Q06-Attachment 1.xls for the Companies total capital expenditures for years 2003-2007.

7. Please see attachment PUCO-DR#4-Q07-Attachment 1.xls.

8. Please see attachment PUCO-DR#4-Q08-Attachment 1.xls for the Companies preliminary capital budget for years 2009-2013.

9. Please see attachment PUCO-DR#4-Q9-Attachment 1.xls.

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10. Please see attachment PUCO-DR#4-Q10-Attachment 1.xls for the Companies ranking of the top 10 categories in terms of capital-investment dollars spent for the years 2004-2007.

11. Please see attachment PUCO-DR#4-Q11-Attachment 1.xls for the Companies ranking of the top 10 categories in terms of preliminary capital-investment dollars projected for the years 2009-2013.

12. Please see attachment PUCO-DR#4-Q12-Attachment 1.xls for the Companies' preliminary total capital expenditures budgeted for the years 2009-2013.

13. The decision making process would not necessarily be different under a scenario where the DSI Rider was approved versus a scenario where the DSI Rider was not approved. The expectation is that reliability and overall system health will be better if the DSI Rider is approved since additional funds would be available for reliability related expenditures as well as other purposes. As stated above in response to PUCO-DR #4-Q3, the DSI Rider was designed to improve the overall health and financial sustainability of the distribution business and to recognize and ensure the continued reliability of the distribution system. While not part of the $1 billion dollar commitment, this DSI Rider may provide, as one possibility, the financial wherewithal to invest in capital projects in excess of or different from that baseline commitment.

14. Please see attachment PUCO-DR#4-Q14-Attachment 1.xls for the Companies' preliminary total capital expenditures budgeted for the years 2009-2013.

15. Please see attachment PUCO-DR#4-Q15-Attachment 1.xls.

16. Although, not quantifiable at this time, the $1 billion capital spend is generally expected to levelize O&M expenditures.

17. As stated above in response to PUCO-DR #4-Q3, the DSI Rider was designed to improve the overall health and financial sustainability of the distribution business and to recognize and ensure the continued reliability of the distribution system. This includes, but is not limited to, the financial wherewithal to cover O&M expenses incremental to those in the test year set forth in Case No. 07-551-EL-AIR. No specific analytic study was completed to estimate the level of O&M Expenses under hypothetical examples based upon differing assumptions about the outcome of the ESP proceeding.

18. The following are the estimated revenues from Rider DSI during each of the years 2009 through 2013, assuming annual SAIDI performance between 90 and 135 minutes for each of the Companies:

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	2009	2010	2011	2012	2013
OE	$51,216,000	$52,701,000	$53,307,000	$0	$0
CEI	$45,048,000	$45,840,000	$46,231,000	$0	$0
TE	$16,663,000	$16,910,000	$17,017,000	$0	$0

19. Rider DSI revenues will not be utilized for transmission capital projects over 69 kV.

20. As stated above in response to PUCO-DR #4-Q3, the DSI Rider was designed to improve the overall health and financial sustainability of the distribution business and to recognize and ensure the continued reliability of the distribution system. Due to the broad scope of the DSI Rider and the competing needs it will be used to address, the DSI Rider cannot be divided out among its prospective components

21. The DSI Rider revenues have not been assigned project and expense categories, but rather such revenues will ensure the overall health and financial sustainability of the distribution system.

22. The prediction of future reliability performance as measured by CAIDI or SAIFI is speculative. This was recognized in the UMS report for CEI based upon the following "Informed readers should recognize that there are a number of other factors that could impact the bottom-line achievement of these goals that have no relation to the effectiveness of these recommendations (particularly with respect to CAIDI). It is quite probable that as CEI adopts these recommendations, these other variables will come into play. For example, the reduction of subtransmission, substation, and backbone outages could shift the mix of outages from those of relatively short duration to those with longer duration. In a sense, the success of the SAIFI initiatives can negatively impact progress on CAIDI." That is why the Companies have proposed using SAIDI as the single reliability index in their Electric Security Plan.

23. Please see attachment PUCO-DR#4-Q23-Attachment 1.pdf for the Companies survey results and attachment PUCO-DR#4-Q23-Attachment 2.pdf for the Companies survey instruments.

24. As stated in Mr. Schneider's testimony, significant funding is required to maintain or improve performance in each of these key areas of focus. The Companies' Plan includes a DSI Rider during the period January 1, 2009 through December 31, 2011 which will provide the Companies the financial wherewithal to remain healthy and capable of continuing their ongoing commitments to the energy delivery and customer service business. A key component of the DSI Rider is to ensure the Companies have the financial wherewithal to make investments to improve reliability. It is difficult to quantify the impact on reliability if the DSI Rider is not approved. No specific analytic

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study was completed to gauge the impact on the Companies' reliability under hypothetical examples based upon differing assumptions about the outcome of the ESP proceeding.

25. The 120 minutes represents the optimal reliability performance for CEI, and it provides an excellent value to customers when balancing reliability performance with the costs of achieving such reliability. The reliability performance target represents second quartile performance based on IEEE performance measures.

26. The proposed revision in the Companies' ESP filing will not affect the CAIDI and SAIFI targets.

27. An analysis was performed based on 2006 SAIDI results from approximately 100 companies by IEEE. Based on this analysis, the Companies are in the second quartile performance ranging from 100-140 minutes. Therefore, the second quartile midpoint of 120 minutes was selected as the SAIDI target.

28. If any of the FirstEnergy Ohio operating Companies' SAIDI performance were to exceed the upper limit of the SAIDI performance band the Companies would perform an analysis and take steps to begin proactive steps to attempt to address the issue.

29. Improving and maintaining reliability is a continuous process that even in the best of years requires continued investments to mitigate against future problems or outages.

30. CEI is on target to implement all short term recommendations made in the UMS report by December 31, 2008. Everything else being equal, the expected reliability benefit for each UMS recommendation is set forth below:

SAIFI Improvement Recommendations:
Enhanced Tree Trimming - expected SAIFI reduction of 0.03; Lightning Protection - expected SAIFI reduction of 0.01; Line/circuit inspection and repair prioritization scheme - expected SAIFI reduction of 0.035; Sectionalize the Backbone - expected SAIFI reduction of 0.09; Replace three-phase reclosers with single-phase reclosers - negligible SAIFI impact as indicated in UMS report; Selectively apply instant trip/timed re-close - negligible SAIFI impact as indicated in UMS report; Inspect, maintain, test and repair/replace as necessary 4 kV exit cable - expected SAIFI reduction of 0.01; Use Worst Performing Devices information to develop a worst CEMI program - this recommendation primarily addresses customer satisfaction and has limited SAIFI impact; Replace failure-prone URD cable - this recommendation primarily addresses customer satisfaction and has limited SAIFI impact; Integrate the Circuit Heath Coordinators with the ESSS Inspection Program -

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an estimated SAIFI avoidance of 0.04; Continue to address the operability of switches on the subtransmission system - these actions will prevent deterioration of subtransmission SAIFI; Continue to replace circuit breakers and relays at the substations- Expected SAIFI reduction of 0.014.

CAIDI Improvement Recommendations:
Systematize Staff Pre-Mobilization - expected CAIDI reduction of 6 minutes; Fully implement partial restoration for OHL ("Cut and Run") and URD ("Split and Hit") - expected CAIDI benefit of 4 minutes; Fully implement use of the alternate shift - expected CAIDI benefit of 4 minutes; Recruit/Train New Dispatchers - the impact of CAIDI is indeterminate in that intent of this action is to proactively avoid a negative impact to CAIDI; Establish new service center in Claridon Township (ISD 2009) and capture benefit of new service center in Euclid (started in 2007) - Expected CAIDI reduction of 2 minutes once new service center is in service; Re-evaluate level of staffing with respect to outage response: - the impact of CAIDI is indeterminate in that intent of this action is to proactively avoid a negative impact to CAIDI; Impact of CI reduction on CMI's - an anticipated CAIDI reduction of approximately 5 minutes.

31. The Companies have not solicited information from other companies or regulatory agencies at this time. Utilities have an opportunity to apply for diverse exclusions thus it could be difficult to perform an apples-to-apples analysis.

32. The Rear Lot Reduction Factor was calculated based on the fundamental fact that CEI experiences significant issues associated with crews being able to restore service timely to customers served on rear lot circuits based on the number of such customers and the need to manually haul poles and other equipment to such sites as opposed to using trucks. As a result of the number of obstructions at such sites including trees, fences, garages, etc., restoration times are significantly longer. In an effort to establish a representative outage duration time which takes into account the challenges of rear lot construction, customer outage minutes would be multiplied by a factor of .5 ("Rear Lot Reduction Factor") on such circuits where fifty percent or more of the premises are served by rear lot facilities. A quantitative analysis supporting the .5 factors is attached.

An analysis was performed on 2003 - 2007 data in CEI, excluding major storms, to determine the difference in restoration between circuits with rear lot and front lot construction. Of the 1086 distribution circuits in CEI, a review of the circuits identified 339 circuits with the majority of the residential customers being served from rear lot construction.

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year	Rear Lot	Front Lot	Percent Increase over Front
2003	195.48	147.62	32.42%
2004	192.00	111.78	71.77%
2005	172.94	95.85	80.43%
2006	150.12	113.61	32.14%
2007	128.07	95.17	34.57%
		average	50.26%

33. A number of UMS recommendations were completed in 2008. CEI projects to implement the following in years 2009-2013:

UMS Report Section 1.5.1 – SAIFI Improvement Recommendations
UMS SI-3 - Line/circuit inspection and repair prioritization scheme: This process was established in 2008 and will continue.

UMS SI-4 - Sectionalize the Backbone (Tier 1 and Tier 2): Tier 2 (review of 100 circuits) will be completed in 2009 (additional expected SAIFI reduction of 0.033).

Planned Expenditures	2009	2010	2011	2012	2013
Capital	$1,533,000	$580,000	$500,000	$500,000	$500,000
O&M					

UMS SI-10 - Integrate the Circuit Heath Coordinators with the ESSS Inspection Program: This recommendation is on-going. No additional incremental costs are planned.

UMS SI-11 - Continue to address the operability of switches on the subtransmission system: Funding for this recommendation will continue.

Planned Expenditures	2009	2010	2011	2012	2013
Capital	$291,000	$500,000	$500,000	$500,000	$250,000
O&M					

UMS SI-12 - Continue to replace circuit breakers and relays at the substations: Funding for this recommendation will continue.

Planned Expenditures	2009	2010	2011	2012	2013

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Capital	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000
O&M					

UMS Report Section 1.5.2 - CAIDI Improvement Recommendations
UMS SR-5 - Establish new service center in Claridon Township (ISD 2009) and capture benefit of new service center in Euclid (started in 2007):

Planned Expenditures	2009	2010	2011	2012	2013
Capital					
O&M	$810,000				

The results of the UMS audit have been shared with the other Operating Companies and such Companies may utilize such recommendations where applicable.

34. The results of the UMS audit have been shared with the other Operating Companies and such Companies may utilize such recommendations where applicable. The $ 1 billion capital commitment will contribute to such efforts.

35. As stated above in response to PUCO-DR #4-Q3, the DSI Rider was designed to improve the overall health and financial sustainability of the distribution business and to recognize and ensure the continued reliability of the distribution system. This includes, but is not limited to, the financial wherewithal to continue the Companies enhanced vegetation management program

36. As stated above in response to PUCO-DR #4-Q3, the DSI Rider was designed to improve the overall health and financial sustainability of the distribution business and to recognize and ensure the continued reliability of the distribution system. This includes, but is not limited to an ability to accelerate hiring to facilitate the assimilation of new personnel in advance of anticipated attrition due to retirement.

37. New workers are hired at the same time existing workers continue to be employed to assure knowledge transfer. These costs are not reflected in the current rate structure.

38. Please see attachment PUCO-DR#4-Q38-Attachment 1.xls for the Companies full-time new hires for the years 2000- (year-to-date) 2008.

39. Please see attachment PUCO-DR#4-Q39-Attachment 1.xls for the Companies full-time projected new hires for the years 2008-2013.

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OCC Set 2 – INT-27 Referring to page 5 of Company Witness Schneider's testimony in the ESP Proceeding where the Company proposes a Delivery Service Improvement Rider ("DSI Rider"):

a. Why has the Company based the proposed adjustments to the DSI Rider solely on the SAIDI index?

b. How were other reliability indices, including but not limited to CAIDI or SAIFI, considered by the Company for the purpose of making adjustments and how would these other indices be used for measuring, reporting, and determining reliability if the Company's ESP Application was approved?

c. What were the values for SAIDI, CAIDI, and SAIFI for each of the FirstEnergy EDUs for each of the years from 2000 through 2007?

d. What were the target values for SAIDI, CAIDI, and SAIFI for each of the FirstEnergy EDUs for each of the years from 2000 through 2007?

Response: Please note that the response below is confidential.

a. The Companies recognize that improvements in SAIFI can adversely affect CAIDI and improvements in CAIDI can adversely affect SAIFI. Thus, the Companies believe that SAIDI is a much better reliability performance indicator. This was also recognized in the UMS report for CEI which stated: "Informed readers should recognize that there are a number of other factors that could impact the bottom-line achievement of these goals that have no relation to the effectiveness of these recommendations (particularly with respect to CAIDI). It is quite probable that as CEI adopts these recommendations, these other variables will come into play. For example, the reduction of subtransmission, substation, and backbone outages could shift the mix of outages from those of relatively short duration to those with longer duration. In a sense, the success of the SAIFI initiatives can negatively impact progress on CAIDI." That is why the Companies have proposed using SAIDI as the single reliability index in both the DSI Rider and ESP.

b. The Companies evaluated the use of SAIFI and CAIDI and in part for the rationale set forth above determined that it would not be appropriate to include other reliability indices for the purpose of making adjustments to the DSI Rider. The Companies' ESP Application is separate and distinct from any reporting requirements of other reliability indices which are currently under review by Commission Staff.

c. The table below contains the Companies SAIDI, CAIDI, and SAIFI performance values for the years 2000-2007.

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	SAIDI			CAIDI			SAIFI		
Year	TE	CEI	OE	TE	CEI	OE	TE	CEI	OE
2000	165.2	118.1	114.8	102.8	118.8	95.3	1.61	1.01	1.20
2001	138.6	105.2	90.7	120.0	108.0	77.7	1.16	0.97	1.17
2002	87.7	145.8	109.4	84.4	153.8	73.4	1.04	0.95	1.49
2003	89.0	152.8	109.9	89.9	124.0	85.4	0.99	1.26	1.29
2004	91.1	153.2	116.1	99.4	126.8	82.6	0.92	1.21	1.41
2005	98.6	194.3	157.4	88.8	113.7	101.3	1.11	1.71	1.55
2006	78.3	150.6	127.8	86.3	125.0	89.0	0.91	1.20	1.44
2007	86.7	125.2	100.5	94.0	106.5	88.7	0.92	1.18	1.13

d. The table below contains the Companies SAIDI, CAIDI, and SAIFI target values for the years 2000-2007.

	SAIDI			CAIDI			SAIFI		
Year	TE	CEI	OE	TE	CEI	OE	TE	CEI	OE
2000	120	95	120	100	95	95	1.20	1.00	1.25
2001									
2002									
2003									
2004									
2005									
2006									
2007									

OCC Set 2
Witness: Schneider

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OCC Set 2 – INT-28 Referring to page 5 of Company Witness Schneider's testimony in the ESP Proceeding where the Company proposes to modify CEI's SAIDI target from 95 minutes to 120 minutes:

a. What is the Company's explanation and justification for also proposing a 50% Rear Lot Reduction Factor for CEI?

b. Why doesn't the increase of 25 minutes proposed for CEI's SAIDI account for all or a portion of this Rear Lot Reduction Factor?

c. If the Company applied the proposed Rear Lot Reduction Factor to CEI's SAIDI values in prior years, what would the adjusted SAIDI values be for the years 2000–2007?

Response:

a. The Companies' explanation and justification for proposing a 50% Rear Lot Reduction Factor for CEI is explained in the Companies confidential response to PUCO DR#4 Q32.

b. An increase of 25 minutes represents the optimal reliability performance for CEI, and it provides an excellent value to customers when balancing reliability performance with the costs of achieving such reliability. The reliability performance target of 120 minutes represents second quartile performance based on IEEE performance measures. The rear lot reduction factor is needed to adjust for the high percentage of rear lot facilities for reasons provided above in "a".

c. The information requested for years 2000-2002 is not readily available. The information requested for years 2003-2007 is as follows:

Year	PUCO reported minutes	SAIDI minutes w/rear lot factor applied
2003	156.2	139.2
2004	153.2	130.1
2005	194.3	160.8
2006	150.6	121.5
2007	125.2	99.6

CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing the *Confidential Version of the Direct Testimony of David W. Cleaver on Behalf of the Office of the Ohio Consumers' Counsel* has been served via First Class US Mail , this 29th day of September, 2008.

Richard C. Reese
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