

Company Name: Con Edison
Case Description:
Case: 08-E-0539

Response to NYPA Interrogatories – Set NYPA3
Date of Response: 07/02/2008
Responding Witness: Infrastructure Investment Panel

Question No. :53

What do you consider to be the optimum state of reliability? That is, is there a value for one or more of the measures discussed above that represents the highest desirable level of reliability? How do you determine the optimum state of reliability?

Response:

The Company seeks to maintain the steady and consistently high reliability it has over the last two decades. This reliability level is reflective of targets set by the Commission.. The Company also continually evaluates ways in which it can better and/or more efficiently maintain such high reliability and also evaluates opportunities to enhance reliability (see response to NYPA-48 and NYPA-49). The Company does not have a formulaic approach to establish a specific “optimum state of reliability,” nor is the Company aware of any other utility that has established such a measure or how such measure would be defined (e.g., on an overall system basis, for the overhead and underground systems separately).

The Company’s Network SAIFI has shown consistent performance without deterioration from year to year with an extremely low level of outages (generally fewer than 10 customers per 1,000 affected by an outage in a year). When weather related variations are considered, the Company’s non-network performance has been consistent over time. Con Edison’s average annual outage rate of about 400 customers per 1,000 is three times better than the national average of about 1,260 outages per 1000 customers.

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Response to NYPA Interrogatories – Set NYPA3
Date of Response: 07/02/2008
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Question No. :54

How, if at all, is the cost of attaining various levels of reliability considered in determining the optimum state of reliability?

Response:

See response to NYPA-49.

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Response to NYPA Interrogatories – Set NYPA3
Date of Response: 07/02/2008
Responding Witness: Infrastructure Investment Panel

Question No. :49

If the response to NYPA-48 includes multiple measures, how do you prioritize among those measures? That is, are they given equal weight in the evaluation process, or are some more important than others?

Response:

See response to Staff 25 and 26.

Company Name: Con Edison
Case Description:
Case: 08-E-0539

Response to DPS Interrogatories – Set DPS4
Date of Response: 05/30/2008
Responding Witness: Infrastructure Investment Panel

Question No. :25

Subject: Load Forecasting and System Planning - 1. How are projects prioritized in the system planning process?

Response:

Distribution System

The Chief Distribution Engineer, working with the Regional Electric Operations organizations, reviews proposed programs/projects to determine prioritization for funding projects in the Electric Distribution (ED-1) capital budget, and ensures the capital projects and programs are aligned with the overall Corporate priorities as follows:

Public and Employee Safety Programs:

The capital expenditures in this category address public and employee safety initiatives. These include such items as the 5-year safety / service / secondary inspection program.

Emergency Management Programs:

The capital expenditures in this category are caused by failed components of the distribution system that must be replaced to meet design standards and restore service to customers. These include such items as replacement of primary cable sections to restore an open automatic feeder, installation of conduit to replace an obstructed duct containing a failed section of primary cable, replacement of a damaged pole, or replacement of overhead wire due to storm damage or other causes.

Regulatory Compliance/Environmental Excellence Programs

These programs include items such as interference agreements; State law and certain of the Company's franchise agreements require the Company to relocate or support in place facilities that interfere with public improvement projects.

Infrastructure Programs that address increased customer demand

These programs include items which address increased customer demand such as, but not limited to new business, area substation load relief, primary feeder relief, non-network feeder relief, and transformer relief.

System and Component Performance Programs

These programs include items which address system reinforcement and reliability, such as but not limited to primary cable and splices, network transformers, secondary systems, and distribution unit substations and their associated feeders. System reinforcement projects and programs are reviewed to determine which take priority based on their impact on overall system performance and the associated cost to achieve that improvement.

Strategic IT Enhancement Programs

These programs include items such as, but not limited to, transformer remote monitoring, integrated system models, grid optimization, and outage management systems, and tools to engineering and operations.

During the Electric Distribution budgeting process, the Electric Operations regions prepare and submit requests for capital funding for system reinforcement projects supported by a list of all projects showing the estimated cost, the magnitude of the overload or undervoltage, percent loading, and anticipated improvement after relief is completed.

For reliability programs, the Electric Operations regions provide a description of the program, type of system improvement, magnitude of the improvement, number of units associated with each program, and estimated cost. Non-network programs are prioritized based on where the greatest impact on system performance for the dollars expended can be achieved.

Distribution Engineering reviews the Regions' submissions and prioritizes system reliability projects to optimize impact on system performance for the dollars expended. The analysis focuses on the following:

- Impact on SAIFI
- Impact on CAIDI
- Impact on network reliability index, also referred to as "network jeopardy"
- Impact on customer satisfaction
- Cost versus benefit incurred
- Cost versus system benefit
- Cost versus "pocket program" improvements

Distribution Engineering meets with the Regional General Managers and Regional Engineering Managers to discuss the above cost/benefit measures and Distribution Engineering's recommended priority list for the reliability projects, and arrive at consensus regarding the priority order of reliability projects to be submitted to the Senior Vice President.

The five-year System Reinforcement request is submitted to Planning & Analysis listing all programs and projects for the five year request, the current budget and current working estimate (CWE). A cut-off line is established based on available funding. Projects above the line are included for authorization in the annual ED-1 budget. When

necessary, recommendations are made to shift crews among Regions to provide resources for critical work.

Substations and Transmission System

Capital projects and programs are prioritized based on an assessment of multiple attributes including if projects are required to meet regulatory requirements, economic growth (customer demand), system reliability, facility upgrades/obsolescence or other operating needs. Projects developed to address regulatory/legal compliance issues or for meeting customer demand are considered mandatory and receive the highest priority. They are followed by projects associated with maintaining or improving system reliability projects, which in turn are followed by projects developed to address longer term issues such as system aging and obsolescence.

Appropriation Process and Approval Requirements

Annual capital budget development consists of three fundamental phases – authorization, appropriation, and funding. In essence, the authorization is an endorsement of the project or program, the appropriation grants permission to expend or obligate funds for the project or program, and the annual capital budget provides the approved funding levels for the project or program for the coming year. The Board of Trustees approves the authorization levels and the annual capital budget. An appropriation is then submitted and approved by the required level of management (as determined by the Delegation of Authorities). Once these three phases are completed, the responsible officers of the Company may begin to implement the project or program.

The project or program appropriation is pursued subsequently to the authorization approval, since a prior authorization in an amount that is equal or greater than the appropriation request is a prerequisite to authorization approval. A partial or final appropriation is submitted on either a “Capital Budget Request Form” or a “Request of Distribution Appropriation Form” supported by an appropriation package that contains; an estimate; a description of the problem, solution, alternatives, and other relevant information; and a property records ruling, to ensure proper accounting. Each package must be submitted and approved by the required level of management (as determined by the Delegation of Authorities). Upon approval, the appropriation grants permission to expend or obligate approved funds for the project or program.

Variance Reporting

Following authorization and appropriation, there are numerous controls to monitor and control expenditures. Three groups, Corporate Accounting, Planning and Analysis, and the business units, review capital expenditures versus the monthly and year-to-date annual budget. This is done on a project program and overall basis. Corporate Accounting prepares, issues, and distributes to appropriate Company personnel a monthly capital budget status report. This report provides information as to approved budget amount, actual expenditures, and explanations of significant variances. It is issued to the officers responsible for the operating areas and other appropriate Company management, so that appropriate expenditure oversight can be exercised as necessary.

Based on the analysis of the year-to-date variance to the budget, the annual Capital Budget can be adjusted a two junctures during the year, namely the First and Second Review. This process allows the Company to adjust the current budget, depending upon the priority of projects, in order to control costs and meet the desired work plan. If the revised budget is more than 5% over the approved annual budget, the revised budget must be approved by the Board of Trustees.

Corporate Accounting monitors variances between the authorization, appropriation, and expenditure levels on all individual capital projects, as well as the overall capital budget funding level. Project managers and local organizations are responsible to monitor expenditures and ensure they remain within approved levels. If costs are projected to exceed approved limits, project managers and local organizations are responsible for obtaining required approvals. Financial Forecasting and Corporate Budgeting also monitor expenditures versus approved appropriation levels and will notify the responsible Program Manager if actual variances require additional approval. Projects cannot exceed levels of authorization and appropriation without further review and approval.

See procedures and policies provided in DPS-27.

Company Name: Con Edison
Case Description:
Case: 08-E-0539

Response to DPS Interrogatories – Set DPS4
Date of Response: 05/30/2008
Responding Witness: Infrastructure Investment Panel

Question No. :26

Subject: Capital Budgeting Process - 1. How is the capital budget process defined, organized, and initiated by the Company? Provide a detailed flow chart showing how the capital budget is developed with all of the steps and organizations involved in the process.

Response:

The Capital Budget development is an iterative process that is performed every year and consists of three fundamental phases – authorization, appropriation, and funding. In essence, the authorization is an endorsement of the entire project or program, appropriation grants permission to expend or obligate funds for the project or program, and the annual capital budget provides the approved funding levels for the project or program for the coming year. The Board of Trustees annually approves the authorization levels and the capital budget. An appropriation is then submitted and approved by the required level of management (as determined by the Delegation of Authorities). Once these three phases are completed, the responsible officers of the Company may begin to implement the project or program.

In early summer, Corporate Accounting issues a document that outlines the submission schedule and the Company's prior five capital year plan. Each organization then reviews its performance for the prior year and year to date, its progress on key goals, and relevant new data, such as demand forecasts, regulatory changes, and its system experience. This review results in a business and work plan for the coming year that contains major goals, objectives, programs, and preliminary performance indicators. These plans contain projects and programs, which are prioritized based on the system requirements. The projects or programs in the plan can be categorized into one of eight different work types, as follows:

- Public & Employee Safety Programs
- Emergency Management Programs
- Regulatory Compliance/Environmental Excellence Programs
- Infrastructure Programs that address increased customer demand
- System and Component Performance Programs
- Employee Development Programs
- Strategic IT Enhancement
- Efficiencies/Process Improvements

Operating area officers, along with their financial managers, engineering representatives, and general managers, review and further refine the business and work plan. These plans are used to establish the funding levels in the capital budget.

Following the preparation of the work plan and the review and approval by the Senior Vice President level, the operations capital budgets are consolidated and then reviewed by the Company's President and Chief Operating Officer. After reviewing and discussing the rationale for prioritization, including costs and benefits of the various projects, a final set of capital projects is presented to the Company's Chief Executive Office and the Chief Financial Officer for final review. Because the range of identified projects exceeds the available resources to perform the work, changes may be made in the prioritization of projects and programs during the process of senior executive review. The projects that fall "below the line" may be re-scheduled to a later period. Such changes illustrate the iterative nature of the capital budget development process.

In November, the final capital budget for the coming year is presented to the Board of Trustees for approval. In January, the Board receives an overview of the five-year capital plan. Although only the budget for the coming year is approved for spending, a five-year capital plan allows for acceleration or deferral of projects based on system requirements.

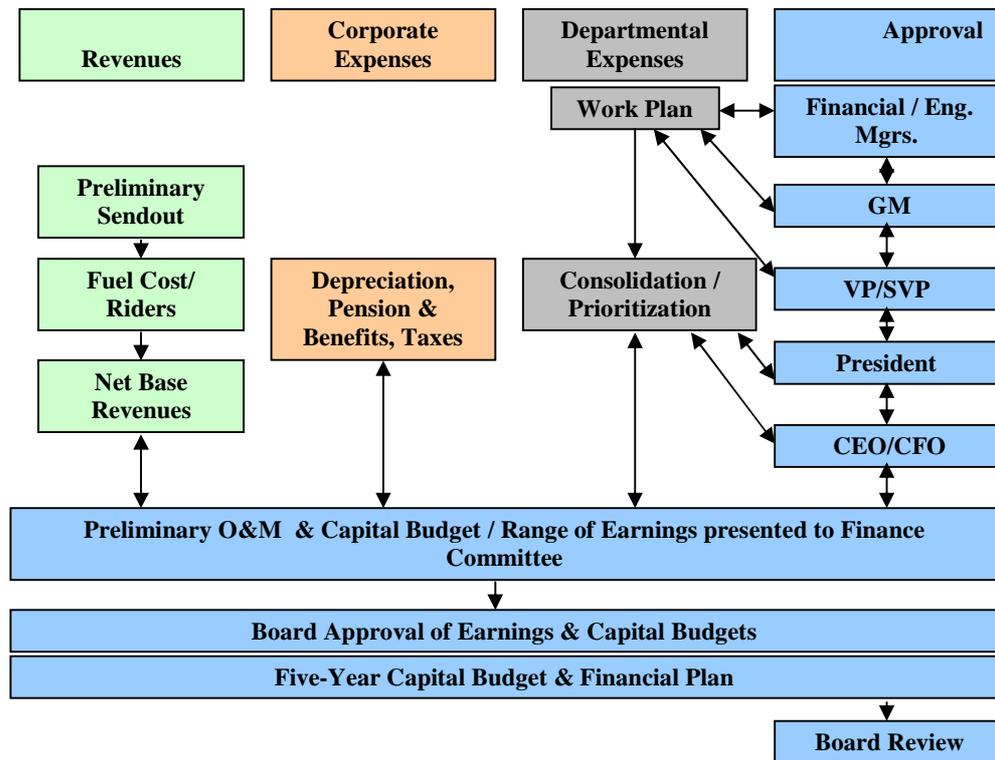
As projects and programs are identified through the above mechanisms during the annual capital budget preparation, an authorization is prepared for inclusion with the documentation given to the Board. Authorizations for new projects are usually based on an order of magnitude estimate and new programs and projects are assigned a budget reference number, which will be unique to the project or program for the life of the undertaking. Projects and programs may be presented for an adjusted authorization, usually based on a current working estimate (CWE), revised engineering estimate, or similar documentation. Additionally, since the Company's five-year capital plan allows for acceleration or deferral of projects, projects identified in the plan for initial expenditures up to 3 years in the future are often authorized. The authorization documentation is reviewed by the appropriate levels of management and then the final documentation is provided to Accounting for inclusion in the Board submission in November. These levels approved by the Board are reflected in subsequent appropriation packages prepared for each project or program.

A new project or program appropriation is requested following the authorization approval, since a prior authorization in an amount that is equal or greater than the appropriation request is a prerequisite to appropriation approval. A partial or final appropriation is submitted on either a "Capital Budget Request Form" or a "Request of Distribution Appropriation Form" supported by an appropriation package that contains; an estimate; a description of the problem, solution, alternatives, and other relevant information; and a property records ruling, to ensure proper accounting. Each package must be submitted and approved by the required level of management (as determined by the Delegation of Authorities). If the project is an emergency, an advanced validation is performed prior to the full appropriation package. Upon approval, the appropriation grants permission to expend or obligate approved funds for the project or program.

Upon approval of the authorization, appropriation, and funding, the operational areas can begin their capital projects or programs. While underway the operating areas have close monitoring and control over expenditures. Each operating area, Corporate Accounting, and Planning and Analysis, review capital expenditures versus the monthly and year-to-date annual budget. In addition Corporate Accounting prepares, issues, and distributes to appropriate Company personnel a monthly capital budget status report. This report provides information as to approved budget amount, actual expenditures, and explanations of significant variances. It is issued to the Program Managers (defined as the Senior Vice Presidents in CI 610-1, which is provided as an attachment in DPS-27) and other appropriate Company management, so that appropriate expenditure oversight can be exercised as necessary.

Corporate Accounting monitors variances between the authorization, appropriation, and expenditure levels on all individual capital projects, as well as the overall capital budget funding level. Where variances require additional approval, Financial Forecasting and Corporate Budgeting will notify the responsible Program Manager. Projects cannot exceed levels of authorization and appropriation without further review and approval.

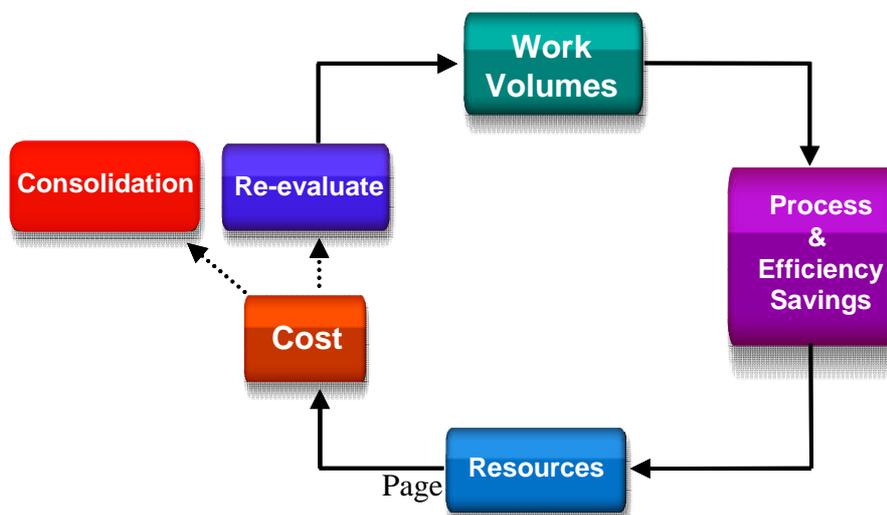
The Budget Process



- Three separate and distinct processes are developed concurrently in the June to September time-frame to contribute to the Con Edison budget process. These three processes cover revenues, corporate expenses, and departmental expenses (O&M and Capital).

- The Budget process begins in June. At this time, Corporate Accounting runs scenarios to compare the forecast for the upcoming budget year to the second year of the previous five-year forecast. Corporate Accounting then sends out the budget guidelines (which sets the initial limits for O&M and Capital). Corporate Accounting begins to develop the Corporate Expense budget, and in this effort works with Planning and Analysis to identify changes to the existing five-year Capital Plan. Organizational Financial Managers develop the O&M budget with managerial input and develop the Capital Budget by working with Engineering. Corporate Accounting begins to develop the revenue budget.
- From mid-July to early August, Corporate Accounting gathers economic and historical data for development of preliminary generation. Financial and Engineering Managers review and approve their budgets, which are then submitted for General Manager review and approval. Budgets are then presented to organizational Vice Presidents for their concurrence and approval. Once that is accomplished, the budgets are submitted to the Sr. Officers for approval. It is an iterative process through each step of review and approval.
- During the period from late August to early September, Corporate Accounting develops preliminary generation, sales and revenue budgets. During this time, Energy Management and the Steam Business Unit develop the preliminary fuel budget, and the Planning and Analysis group consolidates operational submissions for review, concurrence and approval by the President. The Planning and Analysis group acts as a liaison to the operational and support organizations as part of oversight of the process.
- From late September to October, Corporate Accounting consolidates the revenue, corporate expense, and departmental expense budgets. A preliminary financing plan is developed, and once the budget has been approved by the President, it is then submitted to the CFO and CEO for approval. Once approved, this plan then goes on to the Board of Directors Finance Committee.
- In November, the budget is submitted to the Board of Directors for approval, and in December the financing plan is finalized, as is the five-year capital budget. This five year capital and financing plans are then presented to the Board in January.

Budget Development -The Work Plan Process



Developing the Work Plan – Work Volumes, Process Efficiencies, Resources & Cost

- Required Resources must be determined. In order to do this, work volumes are forecasted by determining requirements to meet major objectives of each department. The work is prioritized at the local level early in the process as part of developing the plan. The prioritization process evaluates the relative benefit of each project/program to the Company with respect to public safety, environmental, operational, regulatory and cost benefit. Various models and methods are used and may include numerical weights for the related factors. These projects/programs are analyzed and ranked in order of importance to establish priority.
- As a measure of work, we use reasonable expectancy measures, which is a measure of how much time is needed to accomplish a particular activity or task. This is used to determine the number of work hours required to complete a task, function or program.
- Also taken into consideration is the number of productive hours available, accounting for such things as the Lost Time factor (Training, sick time).
- Additionally, departments factor in efficiency improvements to incorporate how new or enhanced technology and work processes improvements will create or further expand efficiencies. Examples of these efficiencies include productivity improvements (cost reduction), and technological improvements.
- Based on the volume of work, the time needed to do the work and efficiency improvements, the required resources are calculated.
- Once the work has been identified, resources requirements assessed and efficiencies have been factored, cost requirements are then calculated.

Re-evaluation and Consolidation

- After the work has been identified, resources allocated and cost calculated, it is time to re-evaluate the work plan. At this time, further productivity potential is evaluated and changing the mix of the workforce to take advantage of cheaper pay-rates is considered. The work plan is revisited and prioritized.
- Then the work plan is submitted for consolidation and possibly, additional re-prioritization.

Authorization, Appropriation and Funding of Capital Projects

- Before spending can occur, a capital project must go through the following steps: authorization, appropriation and funding.
- A Capital Budget Request form is used to request authorization of a project that will be included in the annual Capital budget for the coming year. The board reviews and approves all projects.
- Before funds can be obligated, an appropriation must be approved. The appropriation includes the funds to be committed, the scope of the project, the estimate, the account rulings, and cash flow for a project by year.
- The funding requested cannot exceed the amount that has been authorized for the project, unless another project is going to be deferred or reduced. The level of approval is dependent on the amount of required funding. The “delegation of authorities” (CI-000-1) is used to determine the required approval. The funding is

the amount of cash for a project included in the budget for a specific year. Once funding is established as part of the appropriation process, spending can begin.

Refer to the attachments in DPS 27.

Company Name: Con Edison
Case Description:
Case: 08-E-0539

Response to NYPA Interrogatories – Set NYPA3
Date of Response: 07/02/2008
Responding Witness: Infrastructure Investment Panel

Question No. :48

What are the measures Con Edison employs to assess the overall system reliability?

Response:

Each year, Company engineering groups perform two major studies to identify necessary improvements to increase system capacity to maintain reliability: the annual distribution system load relief and reliability study, and the ten-year substation and sub-transmission system load relief and reliability study.

The distribution system load relief and reliability study incorporates recent summer peak demand data with location-specific information about customer growth and new construction expected in the coming year, and overlays the projected demand forecast. At the end of each summer, PVL load flow analyses based on customer demand values derived from demand forecasts for the next summer are conducted to help determine specific system reinforcement needs. A final load relief plan identifies all projects for each region. Distribution system reinforcement projects are engineered and constructed with the goal of completion before the start of the next summer period.

The Ten-Year Substation and Subtransmission Feeder Load Relief Program, issued annually, is a forward-looking ten-year load and capacity analysis of all area substations and the associated supply feeders to ensure that no equipment will exceed its capability under the Company's planning criteria. The program identifies the nature, location, and timing of reinforcements required over the next ten years to provide the required service reliability to our customers during design contingency conditions. Substation and transmission projects are evaluated ten years in advance because these projects are usually multi-year efforts to design and construct, and can require acquisition of new property, long-lead time equipment purchases, and necessary coordination among multiple internal and external stakeholders

With respect to the transmission system, the Company performs an ordered analysis to analyze the ability of the system to meet design contingency criteria for each section thereof for the forecasted load. When the analysis concludes that design contingency criteria is not being met for the forecasted load growth for a given year measures must be taken to bring back that section of the system into meeting its design criteria.

SAIFI (System Average Interruption Frequency Index) and CAIDI (Customer Average Interruption Duration Index) are reliability measures that the Company uses to assess reliability performance. These standards help drive the activities and required resources so that system reliability is optimized.

In addition, the Company tracks equipment at several organizational levels so that adverse performance trends are identified and corrected. Reliability programs play a large role in ensuring that these indicators remain on target. Examples include:

- Central Operations Equipment Reliability Index - An index made up of eight indicators measuring: 1) Inadvertent Trips; 2) Deluge Tests Overdue Year-End; 3) Transformer Availability; 4) Overdue Tap Changer PM's; 5) Bulk Power Relay Tests Completed; 6) Non-Bulk Power Relay Tests Completed and 7) SSO Contribution for Feeder Restoration Times; 8) Buss Section Open Auto Due to Feeder Breaker Failing to Clear.
- Central Operations Station Shutdown (Substations or System Operations) - Transmission or substation triggered event which causes the interruption of substation supply and results in the loss of service to the network or load area customers for a period of 5 or more minutes (reportable outage). It includes all events that could have been reasonably avoided by the respective measured organization. For example, the simple random failures of equipment and/or the malfunction of properly designed and tested relays would not be considered reasonably preventable.
- Electric Operations - Reliability Programs tied to Performance Mechanism - Consists of repairing No Current Streetlights, Damaged and Double Damaged Poles, Publicly Accessible Shunts, Stray Voltage Testing of all electric facilities and streetlights, Inspection of UG Facilities, New and Additional Service Jobs to Customers, and Network System Shutdown. The PSC has identified these reliability programs and their corresponding targets that must be achieved with potentially severe penalties for not achieving the targets. The SAIFI and CAIDI indicators are stand alone and not shown with these items.
- Substations Equipment Reliability Index – Includes Bus section open autos due to feeder breakers failing to clear, feeder restoration times on 82 degree temperature variable days, and Transformer availability
- Substations Forced Outages on Major Equipment - Defined as emergency outages (Category 1 or Open Auto level) for major equipment under the maintenance and operations responsibility of Substations. Includes Breakers, Transformers, Reactors, Disconnect Switches, Switchgear, etc that must be taken out on emergency Category 1 (Cannot be Scheduled).
- Substation Relay Misoperations - Relay Protection automatically detects and isolates abnormal conditions in the Power System. Relays can operate

incorrectly. The percent of Relay Misoperations as reported is an overall number and takes into account all relay misoperations in several categories. These categories are:

1. Cable & Equipment
2. Defective Relays
3. Testing or Adjustment
4. Personnel
5. Communication Channel or Environment (includes Telecom caused)
6. Design & Settings
7. Pending Testing/Unknown