BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

In the Matter of

Consolidated Edison Company Of New York, Inc.

Case 09-E-0428

August 2009

Prepared Exhibit of:

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Quackenbush
Exhibit___(JJQ-1)
List of Interrogatory Requests

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Company Name: Con Edison
Case Description: 2009 Electric Rate Filing
Case: 09-E-0428

Response to DPS Interrogatories – Set DPS10
Date of Response: 06/15/2009
Responding Witness: Kressner

Question No. :62
Subject: CSN Nomenclature - Referring to the Research and Development Program Budget, Rate Year Ending 3/2011 (Exhibit_(AK-1)), numerous programs were assigned a CSN number, but some listed programs were not. Define "CSN" and explain the function of this CSN classification. Additionally, explain the reason that some programs were not assigned a CSN number.

Response:

CSN stands for "Cost Segregation Number" which is a work order opened by the Company's Accounting Department to track all costs associated with all authorized projects. All projects with CSN starting with 92_ _ _ are authorized projects.

Projects listed in Exhibit___ (AK-1) with a CSN beginning with 0 _ _ _ _ or no CSN are conceptual projects that are pending authorization.

Company Name: Con Edison
Case Description: 2009 Electric Rate Filing
Case: 09-E-0428

Response to DPS Interrogatories – Set DPS10
Date of Response: 06/16/2009
Responding Witness: Kressner

Question No. :63
Subject: EPRI Base Program - In Exhibit_(AK-1), page 1 of 19, there is a program entitled EPRI Base Program, which has been allocated $4 million for the rate year ending 3/11. During the historical year which ended 12/08, approximately $3 million was spent on this initiative. Describe in detail what the $3 million was spent on during the historical year, and describe what the additional $1 million would be allocated towards.

Response:
The following provides a list of the EPRI base programs that we fund. For a detailed description of these projects please go to www.epri.com and look at the 2008 research offerings under the Research hot button.

Environment
We focus on Programs 60A & 60B - EMF Health Assessment, Program 62 -Occupational Health and Safety, Program 50 - MGP Site Management and Program 102 - Global Climate Policy Costs and Benefits program. These environmental programs provide us with updates on Global climate, MGP, EMF and health related research activities around the world as well as timely critiques and assessments of these research efforts. The historical year funding on environmental programs, which ended 12/08, was approximately $620,000.

Distribution and Power Quality
Many of the programs we fund in this area have elements that address stray voltage, transformer incidents, manhole events, secondary monitoring and manhole entry.
We focus on Program 30 - Underground Distribution Systems, which includes the Urban Underground Distribution Network Systems and Manhole event Risk Management Strategies. We fund five power quality programs and products (PS1A, PS1B, P1.007, P1.008 and P1.010) for the corporation. We also fund Program 128 - Distribution Systems Program, which includes fault location, stray voltage, overhead distribution design and maintenance as well as the Program 124 - Smart Distribution Applications and Technologies, which includes switchgear, universal transformers, smart grid communication and low-cost sensors. In addition, we fund Project Set 161A –Intelligrid

Technology Transfer and Industry which supports users of the Intelligrid architecture methods and introduces potential users to the benefits of migrating towards a smart grid.

The historical year funding on these programs, which ended 12/08, was approximately $485,000.

Transmission and Substation
We focus on Program 36 - Underground Transmission Systems, portions of the Overhead Transmission program (PS35A, PS35D and P35.012), Project Set 38D - Superconductivity, Project Set 112 - Power Delivery Asset Management, Program 39 - Grid Operations and Program 37 - Substations which includes transformer life management, maintenance management, SF6 Environmental Management, switching safety, circuit breaker life management and protection and control. The historical year funding on these programs was approximately $1.3 million.

Energy Efficiency
We focus on Program 70 - End Use Energy Efficiency and Demand Response Technologies in a Carbon Constrained World, Project Set 16D - Infrastructure and Technology for Integrating Demand Response and Energy Efficiency and Project 94.004 - Green house gas impacts of distributed generation and energy storage systems and integration with utility energy efficiency initiatives. The historical year funding on these programs was approximately $370,000.

PHEV
We focus on Plug-in Electric Vehicle research (PS18A, PS18C and PS18D). The historical year funding on the PHEV program was approximately $145,000.

The additional $1 million is to fund the following eight base programs within EPRI:

- EPRI's Energy Utilization programs (programs 161D, 170, 172A and 172B) which offer innovative techniques and ideas associated with energy efficiency and demand response that will help support our end-users. Funding of these programs depends on the outcome of the funding mechanism in EEPS for energy efficiency R&D projects. Estimated funding for this program in the rate year is approximately $475,000.
- Intelligrid programs (programs 161B and 161C), which includes the development of communication technologies and Common Information Model (CIM) integration for intelligent transmission, distribution and advanced metering. Estimated funding for this program in the rate year is approximately $200,000.
- Integration of Distributed Renewables (program 174), which include the development of screening tools, criteria, and guidelines for increasing penetration of renewable generation in existing radial and network distribution, as well as

future circuit functional requirements. Estimated funding for this program in the rate year is approximately $175,000.

- Energy Storage (program 94) which delivers critical information to enable utilities to apply and leverage distributed generation and energy storage assets by conducting objective technology assessments, lab tests, field demonstrations, and

case studies. Estimated funding for this program in the rate year is approximately $150,000.

All of these programs provide technical information and support to Company engineers.

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Response to DPS Interrogatories – Set DPS10
Date of Response: 06/17/2009
Responding Witness: Kressner

Question No. :67
Subject: R&D Program Budget - Network Reliability and Monitoring In Exhibit_(AK-1), page 2 of 19, $750,000 is allocated to a program entitled Network Reliability and Monitoring for the rate year ending 3/11. Provide a detailed explanation of the specific initiatives included in this program. Provide a breakdown of all costs associated with this program.

Response:

This R&D initiative will develop and demonstrate an advanced primary and secondary two-way network remote monitoring system – RMSX (Remote Monitoring System Expansion). The new two-way network remote monitoring system will have the capability to monitor (open/close position) and control (open/make automatic) the existing network protector located at the subsurface network transformer vault. The system will allow control center personnel to identify sources of alive-on-backfeed (ABFs). The current RMS system uses a one-way communication system that employs power line carrier technology. When the feeder breaker is open and the feeder is alive-on-backfeed, communication is no longer available and thus the source of backfeed cannot be determined. In order to clear the backfeed, field crews are sent to enter the network protector vaults, check and perform protector opening operations. This is a time consuming process. The use of the an RMSx system will substantially reduce the time to clear the ABFs, since determining the status of the protector and blocking open the protector, if necessary, can all be done without vault entry. RMSx will provide for additional monitoring inputs to allow improved sensing of the conditions of the sub surface network transformer vaults.

Another proposed project addresses the need of developing an analytical tool for better operator decision making by integrating information from currently disparate data sources into an integrated system model. In this project, a model consisting of the entire electrical infrastructure will be built from transmission to secondary distribution network. The R&D effort will demonstrate the integration of machine learning to evaluate and

predict the performance of the electrical infrastructure based on real-time information run against the model. Also adequate assessment of the electric distribution system and how it impacts customers requires modeling of the area substation, primary feeders, network secondary and services supplying the customers. A real-time stable and reliable

integrated load flow and reliability model is envisioned that can assess the state of the system and loads on components for all levels of contingency, highlighting potential problems that may affect other facilities and/or customers' services. Operation and restoration plans can thereby be evaluated carefully and rapidly to contain the situation and preserve the integrity of the distribution system while mitigating the effect on customers.

A detailed cost breakdown has not been developed yet, however it is estimated that approximately $300,000 will be for the development of the first generation RMSx prototype system and $450,000 will be for the development of advanced operator decision making tools. These estimates are based upon our experience as to the efforts needed to initiate such programs.

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Case Description: 2009 Electric Rate Filing
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Response to DPS Interrogatories – Set DPS10
Date of Response: 06/17/2009
Responding Witness: Kressner

Question No. :68
Subject: R&D Program Budget – Network Equipment Reliability Project - In Exhibit_(AK-1), page 2 of 19, the following four programs are listed below the Network Equipment Reliability Project heading: Advanced Splices and Joints; Advanced Distribution Automation Tech; Advanced Distribution Cables and Advanced Network Switches. No money was spent on any of these initiatives during the historical year which ended 12/08; are these programs new? Describe the details of each program and explain any benefits that the company anticipates receiving from each program. Also, provide a detailed breakdown of the costs associated with each of these programs for the rate year ending 3/11.

Response:
These are conceptual program categories. While the exact details are unknown at this time, once a project is authorized a separate CSN is issued to track funding and the budget for the program it is associated with is reduced by the authorized amount.

In the historic year the following projects, shown in Exhibit__(AK-1), were undertaken in these various program categories:
92475 - Advanced GD Interconnection, Phase 1 - $96,000
92287 - Hammerhead Failure Prediction, follow-on Columbia - $387,000
92297 - Mitigation Techniques to Reduce In-Rush Currents - $90,000
92300 – Enhanced 4 kV Grid Substation Monitoring - $152,000
92401 – Urban Forest Predictive Model and Risk Mitigation - $196,000
92420 – High Tension Monitoring Data Acquisition System - $51,000
92779 – SCADA Implementation of Network Submersible Switches - $ 53,000
92788 – DEW Dynamic Model Development - $189,000
95482 – Integrated Communications Strategy - $97,000

The following are proposed in the rate year:
Advanced Splices and Joints funding is broken down as follows: Partial Discharge Diagnostics for Separable Connectors $100,000, Blown Limiter Tool $50,000, and Advanced Crab Joints $100,000.

Advanced Distribution Automation Technologies includes Virtual Network Protector Test Box $100,000, Blown Cable Limiter Annunicator $50,000, Network Transformer Current Limiter Device $50,000, Distributed Intelligence for Adaptive Network Operation $100,000, Enhanced Model Visualization Demonstration for an Integrated System Model $100,000, and Development of Communications Hardware for uRTU and HTMDAS Sensors $100,000.

Advanced Distribution Cables includes Feeder Test Set Indication of Condition $50,000, Demonstrate Communications Platform on Medium Voltage Cable $50,000, Advanced Curve Cable Limiter $100,000 and On-Line Network Feeder Diagnostic $50,000.

Advanced Network Switches involves the following ideas; Network Transformer Current Limiting Device $100,000, Network Feeder Fast Switch Development $100,000, and DataPass Access Control System $100,000.

The estimates are based upon our experience as to the effort needed to initiate such programs.

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Response to DPS Interrogatories – Set DPS15
Date of Response: 07/01/2009
Responding Witness: Kressner

Question No. :136
Subject: Research and Development (R&D) - 1) In Exhibit __(AK1), on page 3 of 19, Company witness Kressner develops an R&D program change of $2.809 million, by taking the difference between the fully forecasted rate year amount and the historic test year amount. In Exhibit __(AP-5), Schedule 1, on page 3 of 6, line 64, the Accounting Panel takes the fully forecasted rate year projection and then increases that amount for inflation. Since Mr. Kressner's forecast was based on projections of future expenditures presented in rate year dollars, why is it necessary for the Accounting Panel to increase its forecast of this expense element for inflation? 2) In Exhibit__(AK2) Company witness Kressner provides the five-year average historic R&D capitalization percentage, with the amount of capitalization in 2005 normalized dollars. Provide the same table without the 2005 normalization. 3) In Con Edison's Austerity filing, dated May 26, 2008, the Company projected an expense reduction of $3.2 million for R&D for the period between July 1, 2009 and March 31, 2010, and states: "These measures include approximately $3.2 million in reduced expenditures for 2009 R&D programs, such as the development and demonstration of an advanced two-way network remote monitoring system;" Provide a detailed description of how the $3.2 million R&D savings will be achieved. Provide all supporting workpapers used to develop the R&D savings projections. If the workpapers are available in MS Excel format, provide them in that format, including formulas. 4) In light of the on-going economic recession in the Company's service territory, fully explain why the Company is not forecasting a continuation of reduced R&D spending in this case. 5) Provide a table showing how much R&D spending was allowed in rates in Case 07-E-0523, compared to the actual R&D expenditures for the 12 month period that ended March 31, 2009.

Response:

1) Mr. Kressner's projections of future expenditures were not presented in rate year dollars. That is why the Accounting Panel increased these costs by escalation to arrive at the rate year amounts.

2) We do not understand the portion of the question that indicates that the Company provided "the amount of capitalization in 2005 normalized dollars." We are

providing the table without the 2005 normalization for the Sarnoff vehicles. See attached.

3) The $3.2 Million in R&D reduced expenditures will be achieved by reduction in 2 projects and 1 administrative area as detailed below:

08225 – RMSX – Advanced Primary and Secondary SCADA
This Project will not be started in 2009 as originally planned and will be deferred for some later time - saving **$1.5 million** in 2009. This R&D initiative would have developed and demonstrated an advanced primary and secondary supervisory control and data acquisition ("SCADA") whereby a new two-way network remote monitoring system – RMSx (Remote Monitoring System Expansion) would be developed and demonstrated. The new two-way network remote monitoring system would have the capability to monitor (open/close position) and control (open/make automatic) the existing network protector located at the sub-surface network transformer vault. The system would allow control center personnel to identify sources of alive-on-backfeed ("ABFs"). The use of an RMSx system would substantially reduce the time to clear the ABFs, since determining the status of the protector and blocking open the protector, if necessary, can all be done without vault entry. RMSx would provide for additional monitoring inputs to allow improved sensing of the conditions of the subsurface network transformer vaults.

92721 Superconducting Cable and Fault Current Limiter Demo at 75th and York
This project will be slowed-down - with a savings estimated at **$1.46 million** in 2009.
This project with American Superconductor and financial support from the Department of Homeland Security was to demonstrate next generation superconducting cable to link urban substations to test whether this concept could provide increased operational flexibility and good reliability with significantly lower cost than current designs. We had also hoped to evaluate the capability to provide fault-current limiting as an inherent design element of superconducting cable.

92032 - R&D Salaries and Wages
We had anticipated filling an open engineering position within the R&D organization and adding 2 additional engineers. We will not do this, saving **$240,000** in the electric program in 2009.
As we do every year, other areas of the program will likely have some variability in project expenditures compared to budget. This expected variability is based on

the inherent uncertainties in the nature of R&D. We intend that any upward variability in certain project expenditures will be balanced by downward adjustments in others.

4) The Company's testimony in this proceeding; the Company's "austerity" plans filed in response to the Commission's directives in Cases 08-E-0539 and 09-M-0435; and the Company's rehearing petition filed in Case 08-E-0539, explain the cost-cutting measures the Company is undertaking and proposes to undertake, and the Company's views as to actions that are necessary and appropriate under current economic conditions.

5) See the attached spreadsheet titled "DPS 136 (5)" for the detailed rate year spending. This information was taken directly from Con Edison's Cost Accounting Reporting Environment (CARE) system and then the common items were allocated 81.14% towards electric.

Company Name: Con Edison
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Case: 09-E-0428

Response to DPS Interrogatories – Set DPS42
Date of Response: 08/11/2009
Responding Witness: Kressner

Question No. :404
Subject: Follow-up to DPS-64 - Superconducting and Fault Current Limiter program - 1. The Company noted that the demonstration at York will likely not happen until 2014. Has the Company decreased the budget for this program to reflect the delay in the demonstration date of York to 2014? If not, explain why not. 2. What amount of the $800,000 allocated to RYE 2011, the $700,000 allocated to RYE 2012, and the $500,000 allocated to RYE 2013 is associated directly to the planned superconductor demonstration at York? 3. Has the Company secured complete funding for the superconductor project at York?

Response:

1. The Company noted that the demonstration at York will likely not happen until 2014. Has the Company decreased the budget for this program to reflect the delay in the demonstration date of York to 2014? If not, explain why not.

Response: The Company revised the 2009 budget for this project as part of the Austerity plan as detailed in the responses to DPS15-136 and DPS39-365. The Company, U. S. Department of Homeland Security (DHS) and American Superconductor (AMSC) are presently reviewing the project schedule and costs associated with the superconducting cable portion of the York Demonstration. Feasibility and logistics of the installation will depend on project integration with the York substation construction sequence and/or layout, site preparation and installation.

2. What amount of the $800,000 allocated to RYE 2011, the $700,000 allocated to RYE 2012, and the $500,000 allocated to RYE 2013 is associated directly to the planned superconductor demonstration at York?

Response: Because Con Edison has immediate and near term needs to migrate the successful 15kV fault current limiter (FCL) design to 34kV and 138kV, no reductions in the planned FCL development costs as submitted in the rate case are anticipated. Project Hydra funding also includes the design, assembly and laboratory certification testing of a

stand-alone FCL. Currently, the Company is funding Silicon Power Company (SPCO) under Project Hydra. This element of the project is scheduled to be completed by the end of RYE 2011. The subsequent demonstration of this fault current limiter in is not part of the DHS funding. We estimate the FCL development costs associated with the Hydra project to be at least the current estimates of $800,000, $700,000 and $500,000, respectively.

At the conclusion of Phase 1 of Project Hydra, DHS and the Company intended to continue into Phases 2 and 3 with both SPCO and ZENERGY designs to support a competitive down-select. However ZENERGY chose to focus its priority on a separate demonstration with DOE and withdraw from Project Hydra. Both DHS and DOE encouraged us to continue working with ZENERGY, therefore under CSN 92135, the Company is funding Zenergy, to develop and assemble single phase FCL for laboratory testing. In addition, we are currently working with DOE and EPRI to develop advanced power electronics that might help advance the SPCO device to at least 34kV, and we are the utility of record for the DOE project with Zenergy to advance their design to 138kV. We therefore expect the Fault Current Limiter development costs, outside of Project Hydra, during these rate years to be at least the current estimates of $575,000, $625,000 and $625,000, respectively as shown in Exhibit_ (AK-1).

3. Has the Company secured complete funding for the superconductor project at York?

Response: No, DHS funding for this project has only been authorized through GFY 2010. DHS needs to receive Congressional approval to fund this project pursuant to the revised schedule during the federal budgeting process. DHS understands the reasons for the delay and are in accord with extending the schedule and requesting Congress for any necessary funding adjustments.