Q. Please state your name and business address.

A. My name is Edward Ecock and my business address is 4 Irving Place, New York, New York 10003.

Q. By whom are you employed and in what capacity?

A. I am employed by Consolidated Edison Company of New York, Inc. ("Con Edison" or the "Company") as the Department Manager of Gas and Steam Research and Development.

Q. Please describe your educational background.

A. I graduated from the City College of the City University of New York with a Bachelor of Engineering degree in Mechanical Engineering in 1976. I earned a Master of Science degree in Mechanical Engineering from the Polytechnic Institute of New York in 1981, and a Master of Business Administration degree from Pace University in 1986. I am also a licensed Professional Engineer in the State of New York.

Q. Please describe your work experience.

A. I have been employed by Con Edison for thirty-three years and have held various engineering and managerial positions in both engineering and research and development ("R&D").

Q. Please generally describe your current responsibilities.

A. As the Department Manager of Gas and Steam R&D, I am responsible for developing products to enhance the safety, productivity, and operations of the Con Edison gas and steam organizations. I manage the R&D projects associated with gas and steam as well as corporate Environment, Health & Safety ("EH&S"), guide their development and manage the associated R&D budget. To accomplish this, I oversee four engineers dedicated to gas, steam and EH&S project management.

Q. Do you belong to any professional societies or organizations?

A. Yes, I am a member of the American Society of Mechanical Engineers.

Q. Please summarize your testimony.

A. My testimony explains the forecasted level of gas R&D expenditures for the rate years, which essentially continues spending at recent historical expenditure levels. The program changes result in proposed increases to annual R&D expenditures of $1,000, $66,000, and $43,000 for the rate years ending September 30, 2011, 2012, and 2013, respectively. Thus, the proposed spending levels for the three rate years are $1,702,000, $1,768,000, and $1,811,000, for Rate Years 1, 2, and 3 respectively.

Q. Was a document, entitled "CONSOLIDATED EDISON COMPANY OF NEW YORK GAS RESEARCH & DEVELOPMENT PROGRAMS," EXHIBIT ___ (EE-1), prepared under your direction and supervision?

A. Yes, it was.

MARK FOR IDENTIFICATION EXHIBIT __ (EE-1)

Q. Please explain this exhibit.

A. As shown on Exhibit __ (EE-1), planned expenditures for the rate years 2011, 2012, and 2013 are estimated to be $1,702,000, $1,768,000, and $1,811,000 respectively, an increase of $1,000, $66,000, and $43,000, respectively, over the historic year. Additionally, we plan on spending approximately $1.95 million each year from the Millennium Fund to fund projects, an increase of approximately $45,000 over the historic year. This level of Millennium Fund spending matches the level of annual collections for the Fund. The Millennium Fund itself is described below in my testimony.

Q. Please explain the planned level of expenditures.

A. We are attempting to hold the line at the "historical year" expenditure level of $1.7 million, which is reduction of approximately $1.3 million below the $3 million annual amount provided by the rate plan adopted by the Commission in Case 06-G-1332. Note 2 on Exhibit

__ (EE-1) explains an accounting error that affects the total expenditures during the historical period. When this is taken into account, the expenditure level for the historic year for traditional projects becomes $2,013,000. Nonetheless, we are only looking to expend approximately $1.7 million in the rate year which is approximately $1.3 million below current rate plan amount, and to expend slightly additional amounts in rate years two and three. Hence, the proposed spending level for the three rate years are all below the adjusted historical year level.

Q. Please continue.

A. Considering the overall level of the current rate request, we believe that the planned level of expenditures for the three-year period, that closely reflects the historic year level, is the right amount of investment needed to pursue projects that are necessary for safe and reliable service and otherwise address the needs of the Gas Operating Department at this time.

Q. Please explain the planned level of expenditures for the Millennium Fund.

A. As depicted on Exhibit __ (EE-1), the planned level of expenditures for the Millennium Fund approximates the

amounts being collected from our customers for the Fund. In the last several years, our Millennium expenditures on average have exceeded the planned level for the three-year rate period. We were able to spend more than collected during the last several years because we had a prior surplus in the Fund.

NEED FOR R&D

Q. Please describe the purpose of Con Edison's gas R&D program.

A. Con Edison's gas R&D program is designed to pursue projects that are necessary for safe and reliable service by developing and demonstrating new processes/methods or technologies that will improve the Gas Department's operating and business practices. The program seeks out projects useful to our service territory, projects that the industry as a whole is either not addressing or not addressing quickly enough. Our program aims to

- reduce or minimize operations and maintenance costs with new technologies or alternative procedures;
- maintain or enhance the safety and reliability of gas service to customers; and
- enhance environmental excellence and the safety and well being of our employees and customers as well

as improve public safety.

Q. Why does the Company continue to find it necessary to undertake the development and demonstration of new technologies?

A. Our gas system requires continuing modernization, reinforcement, and expansion at the transmission and distribution levels. No other gas utility faces the congestion challenges faced by Con Edison. The congestion manifests itself in two ways: service density and utility congestion.

Q. Please explain.

A. By service density, I mean the number of customers who take service from a gas main. For example, most gas utilities that need to excavate a main on a typical city size street may have to shut off fourteen customers (assuming average frontal of one hundred feet) while, for the same length of main, we may have to shut off sixty customers (assuming average frontal of thirty feet). This level of density has significant operational and cost implications.

Q. Please continue.

A. The second type of congestion refers to the physical concentration of various utility lines, including ours, under the streets. In New York City streets, our gas

lines are in close proximity with underground electric lines, steam lines, water lines, telecommunication lines, sewer piping, subway infrastructure, vehicular infrastructure, old trolley tracks, and various auxiliaries that support traffic lighting and street lighting. While other gas utilities face some similar types of physical congestion, none compares with the greater degree of congestion under which Con Edison operates. Our neighboring gas utility, National Grid, faces similar, but not as challenging, problems as those posed in our service territory in Manhattan.

Q. Can you be more specific as to the implications of this congestion?

A. Yes. The New York City Building and the New York Fire Department Codes require that no plastic piping be installed within thirty five feet of a steam main. For a large part of Manhattan, this means that the Company can never replace steel mains or steel services with less-expensive-to-maintain plastic pipe and instead must continue to work with steel mains and services and cast iron mains. Both steel and cast iron suffer from corrosion, which greatly increases maintenance and replacement costs, and requires additional efforts to assess and monitor their condition, which add to costs.

Q. Are there other consequences?

A. Yes. As I noted above, to reduce traffic congestion while at the same time reducing lanes available for traffic by opening bike lanes, New York City prefers that the Company limit opening up streets to access any of its equipment, including its gas system. The City's Department of Transportation ("DOT") has very restrictive requirements for street access. The Company must often work underground during limited time frames, generally at night or on weekends. In addition, due to heightened noise restrictions, the opportunity to work at night has become even more limited. At the same time, the Company's workload underground has increased with the need to maintain and, in some cases, replace our infrastructure. Thus, it is increasingly difficult for the Company to physically do that work. These are the driving factors of R&D's effort to develop the tools to work underground without digging an open trench.

Q. What is the connection between Con Edison's gas system and the need for R&D?

A. The challenges we face mean that we must develop, sometimes with others, and sometimes alone, solutions to our density, congestion and access problems,

problems which are of significantly less concern to other gas utilities. These issues, such as service density, utility congestion, and the need to continue to use steel mains under the streets of New York, preclude business-as-usual approaches. These challenges are the impetus for the development and deployment of trenchless technologies and other R&D projects.

Q. Please describe what you mean by trenchless technology.

A. Trenchless technology is exactly what the term suggests: technology to repair or rehabilitate gas mains without the need to excavate and create an open trench. An example of a trenchless technology is Cured In Place Lining ("CIPL"), which entails insertion of a collapsible polyurethane pipe into an existing main via one small trench, and pressurizing the liner so that it adheres itself against the host pipe and seals it from leaking.

Q. Why is the Company interested in trenchless technology?

A. Obviously, trenchless technology greatly reduces the need to excavate, which provides a variety of benefits. Besides the cost savings by avoiding excavation, there are other social benefits like reducing traffic congestion and combustion emissions (from trenching

equipment as well as vehicles) as well as improving safety for pedestrians and workers. Deployment of this technology serves the City, State and national goals of reducing greenhouse gases. Investment in this technology is also consistent with the goal of DOT to reduce traffic interruptions and noise due to excavation activities.

Q. Please continue.

A. Trenchless technologies employ gas construction activities using "no-blow" tools and methods that eliminate the release of methane. Not only is this safer for workers and pedestrians, methane, which comprises approximately 95 percent of natural gas, is 21 times the greenhouse gas equivalent of carbon dioxide. Considering the amount of excavation work in the City, the Company should push forward to achieve these benefits by seeking to develop and deploy these technologies now, instead of waiting for others in our industry.

PAST SUCCESSES

Q. Has R&D developed any successful projects through the years?

A. You bet. The Company has a long history of successful R&D project completion, which I describe below.

Q. Are all R&D projects successful?

A. No. It is the nature of R&D that some projects do not result in a successful outcome. Recognizing that reality, most projects are conducted in phases to minimize investment in projects which, as they develop, appear less likely to be successful.

Q. Can you predict which R&D Projects will be successful and work only on them?

A. No one can do that but we do try. When R&D analyzes project opportunities, we consider many factors including probability of success, potential for commercialization and deployment, estimated costs and potential benefit in providing service to customers. We seek to prioritize our project work considering these factors. Also, we seek to work on projects that have combinations of attributes for cost, probability of success and potential benefit.

Q. In recent cases, Staff has proposed that the Company's R&D request be reduced to reflect a capitalization adjustment based upon historic levels of R&D projects that were capitalized. Are you proposing such an adjustment in this case?

A. No, assuming for purposes of argument that such an adjustment is appropriate, the Company has not had any

capitalized projects from Gas R&D for the last five years.

Q. Please describe some recent successful projects conducted under the Gas R&D program.

A. Recent successful Gas R&D projects include the following:

- Development of a No-Dig Anode Installation Method to install a 17 lb. anode, which prevents main corrosion on an existing steel main or service without the need for excavation. Instead, the process utilizes a drill, 5"-diameter hole saw and mini-vacuum excavation to make a hole through an existing Cathodic Protection Test Station and into the adjacent soil for placement of the new anode. This method has demonstrated cost savings due to reduction in excavations as well as preventing corrosion;
- Field demonstration of a steel gas main assessment and repair tool ("GRISLEE") that uses magnetic flux leakage ("MFL") technology to determine loss of wall thickness, and then applies a repair patch to the affected area of the pipe to restore its integrity. This tool, developed with the help of GTI, allows for assessment of a steel gas main and

provides for on-the-spot repair or enhancement of the pipe if the assessment detects holes or wall loss that need immediate attention;

- Field demonstration of an Ultra Violet ("UV") light train to rapidly cure CIPLs used to rehabilitate piping by lining steel or cast iron mains. This process allows for complete curing of the liner in 8 hours and reduces the outage time for the customers by more than 50%. This trenchless technology process developed through OTD can be used in high customer density areas where previously only open trenching with 24 hour customer shut offs was the alternative;
- Demonstrated a field coating application using thermal spray technology on a meter station. The evaluation confirmed that thermal sprays with primers provide the best coating performance so far for outdoor piping applications. This coating process developed by GTI should greatly reduce the frequency of recoating outdoor equipment subjected to corrosion, such as meter stations;
- Completed development of special tools for the no-blow deployment of plugs, stoppers and standpipes in 3", 4", 6", 8" and 12" diameter metallic low

pressure mains. These tools will allow the worker to safely replace service tees or valves without release of methane to the atmosphere. This will improve worker and pedestrian safety as well as reduce greenhouse gas by reducing methane emissions;

- Demonstrated the application of high temperature epoxy spray to rehabilitate 220 feet of 16" diameter corroded and leaking low pressure steel main in close proximity to a steam main where standard lining systems could not be used. This avoided replacement of the main and associated excavation costs. The process was developed by Pipeline Integrity Management, Inc. and has been used in the water and sewer industry, but less so in the gas industry;
- Completed the development of a prototype Emergency Main Shut-Off System ("EMSOS") for a 24" diameter low-pressure metallic main that could be used in lieu of installing shut-off valves. The EMSOS stations will be placed in strategic locations in the distribution system where construction is ongoing, and will provide for isolation during emergencies.

BASE PROGRAM

Q. Please describe the Company's gas R&D program.

A. The program is a combination of research conducted and projects developed internally and undertaken collaboratively with other organizations.

Q. Please describe the Company's internal program.

A. The internal gas research program is divided into three main research areas: distribution (including transmission), EH&S, and the Millennium Fund program.

Q. Please describe each of these areas.

A. The Distribution/Transmission R&D program is directed toward improving the reliability, upgrading the capacity, and extending the life of Con Edison's gas distribution and transmission piping systems. R&D activities in this arena include deployment and advancement of trenchless technologies; development of techniques and equipment to expedite detection and pinpoint location of migrating natural gas; development of pipe repair and rehabilitation systems; research and development of non-destructive testing methods for plastic joints; demonstration of corrosion-resistant coatings for steel mains and structures; development of methods and equipment to mitigate third-party damage; development of methods and equipment to detect

graphitization in cast iron piping; development of methods and equipment to detect, measure and monitor corrosion in cased piping; and development of methods and equipment to better locate and map underground facilities.

Q. You referred above to efforts to mitigate third-party damage. Please describe what you mean.

A. Third-party damage occurs when an entity other than Con Edison excavates and damages our mains. Third party damage is a serious problem as it is extremely difficult and expensive to detect contractor encroachment and take action before damage has occurred.

Q. Please continue with your description of the R&D program.

A. The EH&S R&D program focuses on developing and demonstrating new technologies that will improve worker and pedestrian safety, and promote environmental excellence. R&D activities include developing and field testing an ergonomic bar-holing device; researching and deploying new lighting systems for crew trucks; developing and testing a new jackhammer lift-assist device; developing and deploying no-blow equipment; demonstrating and testing various safety-

related tools that are designed to improve worker safety, such as the "Mule" lifting device; researching methods and equipment to reduce truck idling; researching and deploying solar-powered arrow boards; and researching and developing of non-conductive materials for bar holing.

Q. What is a bar hole device?

A. A bar hole device is the tool used to create a hole in asphalt or soil to allow insertion of a gas detection probe.

Q. What is a Mule lifting device?

A. A Mule lifting device is an electric-powered lifting device much like a fork lift but much lighter and more compact for use in tight spaces and for lifting light loads.

Q. Please continue.

A. The third research area is the Millennium program, which contains projects that are funded through the Millennium Fund. In April 2000, the New York State Public Service Commission approved the Millennium Fund surcharge to be collected via the Gas Adjustment Clause to support long-term (greater than two years) gas distribution research. (This surcharge replaced a reduction in research funding when the Federal Energy

Regulatory Commission R&D eliminated a surcharge on gas pipeline deliveries.) The Commission requires that over 80 percent of these funds be directed at collaborative research. Accordingly, most of the Millennium program falls under the collaborative research discussed in my testimony below. A few of the Millennium activities that are performed by R&D internally are evaluation of cured-in-place liners for applications in sewer pipes to reduce interference costs; and development of a large diameter cast iron joint sealing robot ("CISBOT").

Q. Please describe how projects are identified and researched.

A. The R&D group works very closely with current Gas Operations employees to identify areas in which there is a need for new processes, methodologies and technologies. We meet with every department and area organization and discuss project status, priorities, and explore new ideas. We conduct "road shows" where we present select projects to first-line managers to educate them on new products and methods, and solicit ideas for further improvement on their operations. We solicit input from the various gas organizations when we receive new project proposals from possible

collaborative partners. We review the Gas Budget and search for areas where there could be cost savings opportunities through advanced technology. Also, we conduct periodic brainstorming sessions and technology fairs to discuss problems with various gas departments, solicit ideas for new projects, and showcase new technologies. For example, during the prior rate year, we conducted a technology fair for Gas Operations that featured products that were developed through R&D, and that are either currently available or that will be available soon. In addition to previewing advanced technologies for the gas industry, the fair exhibited several existing trenchless technologies, inspection tools, safety tools, and equipment designed to eliminate methane emissions, so that the operators could learn more about the applicability of these devices and deploy them in their operations. Finally, I note that knowledge of the gas business is an essential element of a successful R&D program, and three of my staff have over thirty years of collective experience working in the Gas Department.

Q. Besides projects developed within the Gas Department, does the Company work with other institutions to develop projects?

A. Yes. The R&D employees maintain regular contacts with other utilities, gas trade groups, universities and technology developers as a further source for new ideas. For example, we work with the Gas Technology Institute ("GTI"), NYSEARCH, Operations Technology Development ("OTD"), Sustained Membership Program ("SMP"), American Gas Association ("AGA"), American Gas Foundation ("AGF"), Water Research Foundation (formerly "AWWARF"), various utilities including National Grid, Gaz de France and Tokyo Gas, and industry, government (DOT - Pipeline and Hazardous Materials Safety Administration ("DOT PHMSA")) and private organizations, both national and international.

Q. Please describe some of the Gas R&D projects that have been identified as a result of working with other institutions.

A. There are several of these, but most recently, we have embarked on several projects with GTI that are intended to improve the reliability of regulator manholes. These are field-applied thermal spray coating of regulator equipment; manhole water removal using turbine-driven natural gas pumps; and thermoelectric generators to provide a power source outside the manhole.

Q. Following identification of a project, please describe how a project is developed.

A. For the internal process, once a potential product is identified, we obtain a sponsor within the Gas Department who assists in preparing a full cost/benefit justification for the research. The sponsor Gas Department provides support as the project progresses through their employees' time and funds for field demonstrations. The user organization implements the product if it is successfully developed. The collaborative process follows in the same manner as the internal process except the cost benefit analysis is usually performed by the research organization (*i.e.*, OTD or NYSEARCH).

CURRENT AND FUTURE GAS R&D PROJECTS

Q. Please describe the process you employed to developing your Rate Year forecast.

A. The program plan presented in a rate filing reflects a combination of specific projects and targeted programs that are necessary to improve safe and reliable service. Some of the projects are a continuation of ongoing efforts, while others are new initiatives. The new initiatives are more conceptual in nature than ongoing projects because these are at an early stage

where proof of concept may not yet have been proven. During the period leading up to the Rate Year, the Company endeavors to match the current needs of Company operations with opportunities for solutions. In all cases, an analysis of candidate projects is made, with potential advantages reviewed against financial resources required for successful development, to arrive at the right amount of investment. A cost/benefit analysis is performed for all projects over $50,000. Emphasis is placed on projects with the possibility of near- and mid-term benefits, but we are also mindful of long-term programmatic issues that need to be addressed. This general approach facilitates a comparison of various candidate technologies and aids in project selection and prioritization.

Q. What are some of the R&D projects to be pursued in the Rate Years?

A. Gas R&D projects that will be pursued during the three rate years focus on further development and deployment of trenchless technology, commercialization of various robots for pipe line assessment, development and testing of various EH&S products and methods, commercialization of facility locators for plastic, steel, and cast iron mains, GPS applications, and third

party damage prevention. As discussed above, the trenchless technology effort is important to continue to reduce the need to excavate in New York City. The robotics effort is needed to comply with upcoming federal regulations. Advancements in facility locators will help minimize third party damage through more accurate mark outs, and research in GPS equipment and third party damage prevention technology will further address this concern. These projects will be described further below. We expect to continue work on the projects described earlier, such as additional expenditures of $100,000 for GRISLEE, and on other programs including:

- Adapting Hammerhead and ConSplit Equipment - this trenchless technology may allow for replacing existing mains with larger plastic or ductile iron piping. The projected expenditures for this project are $250,000 during the third year of the rate period;
- Development of a reliable methane sensor for household use to warn consumers of a hazardous gas condition. The projected expenditures for this project are $175,000 during the rate period;
- Joining a consortium of gas R&D investors called

the Utilization Technology Development ("UTD") to further research on energy efficiency products. We believe that it is necessary to advance research in this area to allow the consumer to utilize natural gas energy in a more cost-effective and environmentally conscious manner. The projected expenditures for this project are $250,000 during the rate period;

- GPS for facility locating - this can provide for more accurate location and mark outs of gas mains, and will hopefully reduce the damage caused by third-party contractors. The projected expenditures for this project are $100,000 during the rate period; and
- Technology Deployment and Implementation ("TDI") program - this can provide gas operations and engineering personnel with the tools needed to learn and understand the new available pipe rehabilitation/replacement technologies, determine the appropriate technology for repair and replacement projects, and provide a means to transfer knowledge. The projected expenditures for this project are $600,000 during the rate period.

Q. What are some of the projects currently funded by the

Millennium Fund?

A. Page 3 of Exhibit __ (EE-1) lists some R&D projects that are underway and associated with the Millennium Fund, to show the types of projects being undertaken.

Q. Please describe some of the more significant Millennium Fund efforts that are listed in the exhibit.

A. As I describe above, in that 80 percent of these funds require collaboration, NYSEARCH and OTD each manage a multitude of projects directed at our needs. Each year, we select projects in these two collaborative programs that are mid- to long-term in nature and that will benefit our operations through reliability and safety improvements, or efficiency gains. Between these two collaborative programs, we are invested in almost 70 projects that address problems in the areas of pipeline integrity assessment, facility locating, leak detection, pipe materials, repair and rehabilitation of pipes, third party damage, gas interchangeability, and EH&S. Historically, our expenditures for these two collaborative programs have been approximately $1.3 million annually. The following are examples of some of the more significant Millennium Fund projects included in the exhibit that are not part of the collaborative work with NYSEARCH or

OTD:

- Field testing and commercialization of a large cast iron joint sealing robot ("CISBOT") for 16" to 36" mains. This robot allows for complete sealing of the cast iron joint to mitigate leakage at the joint and extends the useful life of these large diameter cast iron mains. The projected expenditures for this project are $150,000 during the rate period;
- Evaluation of CIPL liners for application in sewer pipes. This work is a joint effort with New York City Department of Design and Construction ("NYCDDC") to determine if CIPL lining of sewer pipes is feasible in light of the high temperature condensate that is introduced into the sewers by the Company and its steam customers. If successful, this would greatly reduce interference costs associated with replacement of sewer pipes in the vicinity of our gas mains. The projected expenditures for this project are $300,000 during the rate period.

Q. Please describe the major current gas-related R&D projects.

A. Besides those already described, many of these current Gas R&D projects were started after Case 06-G-1332, and are still being developed and focus on various issues

affecting Gas operations, including:

- Commercialization of a cast iron joint locator, which is expected to help pinpoint suspected leaks and decrease the extent of excavations needed to locate the leak. A commercial developer will improve upon the prototype that OTD developed and will ruggedize the equipment, and also improve the user interface to make it more marketable to other companies. This device will assist operators in pinpointing the exact location of cast iron joints to aid in the efforts to pinpoint joint leaks, or to use the keyhole coring excavation method (18" diameter coring method) to access the joint for inspection or maintenance;
- Design and development of a gas vent line protector that will prevent loss of service to customers during periods of severe flooding. These vent line protectors will protect about 9,000 of our customers designated to be in a storm surge area from service interruptions during a Category 3 hurricane that may produce a flood condition and cause an unsafe condition;
- Demonstration of non-interruptible gas meter change out kits that will allow for meter change outs with

no service interruptions. These kits, developed through OTD, have been demonstrated to assist with the meter change-out program. They eliminate the need to interrupt service to the customers and they eliminate methane emissions during the change-out process, which is a safety hazard as well as an environmental issue;

- Demonstration of a corrosion monitoring system in cased piping environments. New federal DOT PHMSA regulations taking effect in 2012 will require that distribution gas mains be periodically assessed for integrity management, and corrosion is a primary cause of reduced pipeline integrity. Since gas mains in cased piping are inaccessible to equipment and methods used for corrosion detection, the cased piping would need to be excavated to perform this operation. To avoid excavations yet have the ability to detect and monitor corrosion, a corrosion monitoring system is being tested in the annulus (which is the air space between pipes fitted within each other) of the cased pipe to determine if it is a feasible alternative to excavating and using traditional condition assessment equipment and methods;

- Working with the GTI to commercialize an acoustic pipe locator that may help determine location of plastic pipe underground;
- Field testing and commercialization of a robot ("GRISLEE") to perform live internal inspections and localized repairs to steel gas mains, which can help reduce the need to replace gas mains, and reduce the extent of excavations. Building on the successful demonstration of this with GTI, additional field tests will be conducted and then the robot will go through the commercialization process; and
- The Technology Deployment and Implementation ("TDI") initiative, which aims to educate engineers, planners, and supervisors about the cost benefits and risks of the currently available trenchless technologies. The initiative includes: (i) the development of a cost calculator that compares the costs of open trenching to various trenchless technologies; (ii) the development of an e-learning course to instruct new supervisors and managers of the various trenchless technologies available; and (iii) demonstrations of select trenchless technologies in areas that have been

considered challenging in the past.

Q. Does Con Edison coordinate gas research projects with other outside organizations and gas utilities?

A. Yes. As discussed above, Con Edison does extensive coordination of research projects with other organizations and gas utilities. We work with NYSEARCH and OTD, which are the two largest gas research consortia in the country, each with 20 member utilities, giving us the ability to leverage our research investment funds. Also, the Company works closely with the Northeast Gas Association, GTI, the United States Department of Energy, and others. These organizations facilitate the most rapid development of technology of importance to utilities, including Con Edison, at the lowest reasonable cost. As mentioned above, we also work with other utilities, such as National Grid on common problems. The Company has collaborative funding mechanisms in place and agreements to share results of research efforts.

Q. Please describe an example of a collaborative effort.

A. An example of an important ongoing collaborative effort is one that we are working on with NYSEARCH to develop two robots (EXPLORER II and TIGRE) to inspect and assess the condition of unpiggable distribution and

transmission mains (*i.e.*, mains that cannot facilitate standard pigging tools to assess the condition of the pipe due to pipe bends or valves). These robots are vital to the strategy to comply with upcoming DOT PHMSA regulations on pipeline integrity. All the aforementioned organizations are participating in funding this effort, including DOT PHMSA. This robotics program is a multi-year and multi-million dollar effort and is considered to be one of the highest R&D priorities in the gas industry.

Q. Does this conclude your testimony?

A. Yes, it does.

CONSOLIDATED EDISON COMPANY OF NEW YORK GAS RESEARCH AND DEVELOPMENT PROGRAMS

EXHIBIT___EE-1
SCHEDULE 1
PAGE 1 of 3

Project Title	12 months Historic 07/08-06/09	12 months Est. 09/30/11	Variance	12 months Est. 09/30/12	Variance	12 months Est. 09/30/13	Variance
Administration							
SALARIES AND WAGES	$ 275	$ 279	$ 4	$ 291	$ 12	$ 303	$ 12
OTHER EXPENSES	36	34	(2)	36	2	37	1
PATENT SEARCHES IN CONNECTION WITH COMPANY R&D TECHNOLOGY APPLICATIONS	23	16	(7)	16	-	16	-
DEVELOPMENT OF AN R&D WEBSITE	-	5	5	-	(5)	-	-
GAS R&D RELATED TRAVEL AND TIME BY NON-R&D COMPANY PERSONNEL	5	5	-	5	-	10	5
Total Administration	339	339	-	348	9	366	18
Indusry Group					-		-
NYSEARCH-NORTHEAST GAS ASSOCIATION RESEARCH DEVELOPMENT AND DEMONSTRATION	5	80	75	80	-	80	-
Total Industry Group	5	80	75	80	-	80	-
Internal Program							
DEVELOPMENT AND TESTING OF A MANHOLE COVER MONITORING SYSTEM	-	25	25	-	(25)	-	-
DEVELOP EMERGENCY STOP-OFF STATIONS FOR LARGE DIAMETER LOW PRESSURE MAINS	59	25	(34)	-	(25)	-	-
TECHNOLOGY DEPLOYMENT AND IMPLEMENTATION (TDI) PROGRAM - PHASE I	21	-	(21)	-	-	-	-
TECHNOLOGY DEPLOYMENT AND IMPLEMENTATION (TDI) PROGRAM - PHASE II	206	150	(56)	200	50	250	50
ADAPTING HAMMERHEAD AND CONSPLIT EQUIPMENT AND CONDUCT DEMONSTRATIONS	-	-	-	-	-	250	250
FIELD DEMO OF MODIFIED CONSPLIT MACHINES	64	-	(64)	-	-	-	-
ADVANCING THE USE OF CON-SPLIT WITH 12" PE PIPE ON AN 8" HEAD	-	-	-	-	-	-	-
EVALUATE CIP LINERS FOR RETAINING UNDERMINED CAST IRON GAS MAIN	77	50	(27)	75	25	150	75
DEVELOP AND DEMONSTRATE INTERNAL CAST IRON JOINT SEALING ROBOT FOR LARGE DIAMETER MAINS	41	50	9	50	-	150	100
DEMONSTRATION OF SUBCOIL	(381)	-	381	-	-	-	-
LIVE STEEL GAS MAIN INSPECTION AND REPAIR SYSTEM (GRISLEE) - SEE NOTE 2	-	100	100	-	(100)	-	-
SMART PIGGING FOR TRANSMISSION MAINS	-	25	25	25	-	25	-
DEMONSTRATION OF DISTRIBUTION SMART PIGS	-	35	35	35	-	35	-
EVALUATE AND DEMONSTRATE FACILITY LOCATOR DEVICES	-	5	5	5	-	5	-
A STUDY TO IMPROVE THE EFFECTIVENESS OF INFRASTRUCTURE MARK-OUT CONTRACTORS	8	-	(8)	-	-	-	-
DEMONSTRATION OF SIMWELD (A WELDING SIMULATOR)	50	35	(15)	-	(35)	-	-
FEASIBILITY STUDY TO RESEARCH INNOVATIVE COATINGS	21	-	(21)	-	-	-	-
NON-DESTRUCTIVE TESTING OF ELECTRIC FEEDER LINES TO AVOID ERROR	-	8	8	-	(8)	-	-
GPS FOR FACILITY LOCATING	-	50	50	50	-	-	(50)
DEVELOP AND TEST AN IMPROVED SERVICE TERMINATOR DEVICE	71	20	(51)	20	-	20	-
DEVELOP A NO-DIG GAS SERVICE CUT & CAP SYSTEM	-	20	20	-	(20)	-	-
OPERATIONS TECHNOLOGY DEVELOPMENT (OTD), NON-MILLENNIUM	643	100	(543)	100	-	100	-
GAS OPERATIONS INNOVATION MONITOR - A SUBSCRIPTION SERVICE	12	13	1	13	-	13	-
REMOTE MONITORING SYSTEM FOR DRIP POT WATER	14	25	11	-	(25)	-	-
PROTECTION OF PLASTIC GAS PIPE FROM ELECTRICAL ARCING AND BURNING	51	15	(36)	-	(15)	-	-
EVAULATION OF CONDITIONS CAUSING LOOSENING OF 2 INCH COMPRESSION COUPLINGS	131	40	(91)	-	(40)	-	-
AMERICAN GAS FOUNDATION'S STUDIES - NATURAL GAS TECHNOLOGY VISION	10	-	(10)	-	-	-	-

CONSOLIDATED EDISON COMPANY OF NEW YORK GAS RESEARCH AND DEVELOPMENT PROGRAMS

Project Title	12 months Historic 07/08-06/09	12 months Est. 09/30/11	Variance	12 months Est. 09/30/12	Variance	12 months Est. 09/30/13	Variance
GAS R&D PLANNING WORKSHOP	-	-	-	40	40	-	(40)
DEMONSTRATE GAS RESEARCH INSTITUTE PRODUCTS	2	25	23	25	-	25	-
GAS REGULATOR VENT LINE PROTECTOR	(26)	-	26	-	-	-	-
GAS REGULATOR VENT LINE PROTECTOR - PHASE II	11	-	(11)	-	-	-	-
CORROSION RATE MONITORING IN CASED GAS TRANSMISSION PIPELINE SEGMENTS	130	-	(130)	-	-	-	-
EVALUATION AND DEPLOYMENT OF A THERMOGRAPHIC CAMERA FOR LEAKAGE MITIGATION	3	25	22	-	(25)	-	-
FIELD TESTING OF THERMAL SPRAYS	(5)	-	5	-	-	-	-
EVAULATE HYDROVAC EXCAVATING	50	-	(50)	-	-	-	-
DEMONSTRATION AND FIELD TESTING OF NORTHEAST GAS ASSOCIATION	52	50	(2)	50	-	50	-
STEAM TRAP MONITORING IN GAS TUNNELS	(42)	-	42	-	-	-	-
PILOT DEMO OF MOBILE RED TAGGING PROCESS FOR GAS OPERATIONS	10	-	(10)	-	-	-	-
DESIGN, DEVELOP, INSTALL AND TEST A GAS CURB VALVE REMOTE OPERATOR	14	-	(14)	-	-	-	-
LIFTING PROGRAM	-	20	20	20	-	20	-
DEVELOPMENT AND DEMONSTRATION OF NEW ENVIRO JET TECHNOLOGIES	-	10	10	10	-	10	-
DEMONSTRATION OF THE MULE LIFTING DEVICE	10	-	(10)	-	-	-	-
DEVELOP NO BLOW EQUIPMENT & METHODS	10	-	(10)	-	-	-	-
FIELD TESTING OF VARIOUS SAFETY RELATED TOOLS & EQUIPMENT	10	10	-	10	-	10	-
RESEARCH, DESIGN, AND DEVELOPMENT OF NON-CONDUCTIVE MATERIALS FOR BAR-HOLING	8	25	17	10	(15)	-	(10)
EPRI/NYSERDA/DOE TRAVEL BY ENVIRONMENTAL AFFAIRS PERSONNEL	-	2	2	2	-	2	-
DEVELOP ADVANCED METHANE SENSOR	-	75	75	100	25	-	(100)
DEVELOP FACILITY LOCATOR TO DETECT ELECTRIC CABLES NEAR GAS MAINS	-	75	75	50	(25)	-	(50)
COMMERCIALIZE DRIP POT MONITOR DEVICES	-	50	50	50	-	-	(50)
DEMONSTRATE VOICE RECOGNITION FOR GAS	-	75	75	50	(25)	-	(50)
UTILIZATION TECHNOLOGY DEVELOPMENT (UTD) - ENERGY EFFICIENCY PRODUCT RESEARCH & DE	-	-	-	250	250	250	-
EVALUATION OF HIGH TEMPERATURE EPOXY SPRAY LINING FOR LARGE DIAMETER MAINS	(94)	-	94	-	-	-	-
DEMONSTRATION TO ADVANCE STARLINE FOR LARGE DIAMETER GAS MAIN REHABILITATION	116	-	(116)	-	-	-	-
DEVELOP TECHNOLOGIES TO REDUCE TRUCK IDLING	-	50	50	100	50	-	(100)
Total Internal Program	1,357	1,283	(74)	1,340	57	1,365	25
Sub Total Traditional Projects = Total Administration + Total Industry Group + Total Internal Program	$ 1,701	$ 1,702	1	$ 1,768	66	$ 1,811	43

CONSOLIDATED EDISON COMPANY OF NEW YORK GAS RESEARCH AND DEVELOPMENT PROGRAMS

Project Title	12 months Historic 07/08-06/09	12 months Est. 09/30/11	Variance	12 months Est. 09/30/12	Variance	12 months Est. 09/30/13	Variance
Millenium Fund							
FAILURE TESTING OF GAS TRANSMISSION COUPLINGS	$ 20	$ -	$ (20)	-	$ -	$ -	$ -
EVALUATION OF CIP LINER FOR APPLICATIONS IN SEWER PIPES TO REDUCE INTERFERENCE COST	35	50	15	100	50	150	50
COMMERCIALIZATION OF THE DIGITAL LEAK DETECTOR	12	-	(12)	-	-	-	-
UUC INTERFERENCE COST REDUCTION	43	50	7	50	-	50	-
16" THROUGH 36" CAST IRON JOINT SEALING ROBOT (CISBOT) DEVELOPMENT - PHASE II	(50)	-	50	-	-	-	-
16" THROUGH 36" CAST IRON JOINT SEALING ROBOT (CISBOT) DEVELOPMENT - PHASE III	10	50	40	50	-	-	(50)
NYGAS (NYSEARCH) FUNDING FOR MILLENIUM GAS RESEARCH AND DEVELOP	760	850	90	850	-	900	50
DEVELOPMENT AND DEMO OF A PROTOTYPE PCB AND PFT FIELD ANALYZER BASED ON READ TEC	14	170	156	50	(120)	20	(30)
MGMT OF MGP IMPACTED SEDIMENTS-PHASE IV	-	25	25	25	-	25	-
LIVE STEEL GAS MAIN INSPECTION AND REPAIR SYSTEM (GRISLEE) - SEE NOTE 2	317	-	(317)	-	-	-	-
CREATE AND EVALUATE AN MGP SOIL VAPOR INTRUSION DATABASE	30	30	-	75	45	50	(25)
EPRI FUNDING FOR MGP SITE REMEDIATION AND HEALTH RISK R&D	161	170	9	179	9	188	9
OPERATIONS TECHNOLOGY DEVELOPMENT (OTD), NOT FOR PROFIT, PROGRAM	*552*	*560*	*8*	*570*	*10*	*575*	*5*
	$ 1,904	$ 1,955	$ 51	$ 1,949	$ (6)	$ 1,958	$ 9

NOTES:
1) Rate year amount excludes escalation
2) This project was mistakenly charged to the Millennium account during the Historic Year, so the actual expenditures for traditional projects in Historic Year are $2,013,000, and for Millennium projects are $1,587,000.