ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition for Determination of Need for an Electrical Power Plant in St. Lucie County by Panda Midway Power Partners, L.P.	)	DOCKET NO. 000289-EU
	)	FILED: April 24, 2000

DIRECT TESTIMONY

OF

JEFFREY L. MELING, P.E.

ON BEHALF OF

PANDA MIDWAY POWER PARTNERS, L.P.
PORT St. LUCIE, FLORIDA

IN RE: PETITION FOR DETERMINATION OF NEED FOR AN ELECTRICAL POWER PLANT IN ST. LUCIE COUNTY BY PANDA MIDWAY POWER PARTNERS, L.P.,
FPSC DOCKET NO. 000289-EU

DIRECT TESTIMONY OF JEFFREY L. MELING, P.E.

Q: Please state your name and business address.

A: My name is Jeffrey L. Meling, and my business address is 3701 Northwest 98th Street, Gainesville, Florida 32606.

Q: By whom are you employed and in what position?

A: I am employed as Vice President and Principal Engineer by Environmental Consulting & Technology, Inc.

Q: Please describe Environmental Consulting & Technology, Inc. and its business.

A: Environmental Consulting & Technology, Inc. ("ECT") provides multidisciplinary environmental services throughout the United States and worldwide. ECT's professional capabilities include a comprehensive range of consulting service areas focused on the environmental needs of its private and public sector clients. These diverse capabilities are provided throughout the following major service categories:

- Environmental monitoring, baseline descriptions, and impact assessments.
- Environmental siting, licensing, and permitting.
- Toxic and hazardous material management and control.
- Storage tank assessments and management.
- Environmental audit and liability management.
- Planning.
- Engineering services.
- Regulatory compliance services.
- Asbestos consultation.
- Industrial hygiene.

Q: Please describe your duties with ECT.

A: I have both staff and project management responsibilities. First, I manage a group of four to six other air quality engineers and scientists, and, as an officer, I also have companywide responsibilities regarding air quality staffing. Second, a majority of my time is spent managing and working on projects, both air quality permitting projects and multidisciplinary licensing/permitting projects.

QUALIFICATIONS AND EXPERIENCE

DIRECT TESTIMONY OF JEFFREY L. MELING, P.E.

Q: Please summarize your educational background and experience.

A: I received my bachelor of science degree in civil engineering in 1977 and a master of science degree in environmental engineering in 1979, both from the University of Illinois. In the fall of 1979, I began my professional consulting career, and I have been in this field since that time. During this approximately 21-year period, I have worked on a wide variety of environmental projects and studies across the United States and in several foreign countries. The clients I have worked with include governmental agencies (e.g., U.S. Environmental Protection Agency [EPA]), industrial companies, and power companies, both utility and nonutility.

Q: What is your experience in power plant siting and licensing?

A: My experience in this area is extensive. I have worked on power plant siting, licensing, and permitting projects since early in my career. These projects have been located in many of the United States and a number of foreign countries. I will highlight a few examples. First, beginning in 1990, I managed the air quality tasks for Tampa

Electric Company's 1,100-megawatt (MW) Polk Power Station, which was licensed through the Florida Electrical Power Plant Siting Act (FEPPSA). I was responsible for all air quality aspects of this licensing effort, including a multistation, year-long ambient air monitoring program, control technology assessments, and rigorous air quality impacts studies.

Second, from 1991 through approximately 1994, I managed a site selection study and all environmental permitting for Mission Energy Company's 150-MW Auburndale, Florida, cogeneration plant. This project required a Prevention of Significant Deterioration (PSD) (air quality) permit, a water use permit, noise monitoring and predictive modeling, wetlands delineation and permitting, and other environmental studies and permits.

Third, from 1992 through approximately 1996, I managed the licensing of Panda Energy Corporation's 230-MW Brandywine, Maryland, cogeneration facility. The requirements for this project were very similar to those just described for the Auburndale project. However, unlike the Auburndale project, the Brandywine licensing effort required approval from the Maryland Public Service Commission (PSC) via a process very

similar to the certification process used here in Florida. Because of the project's location in the Washington, D.C., suburbs, we faced a number of complex issues and defended our analyses and conclusions in hearings conducted by a Maryland PSC examiner. Brandywine was the first nonutility generating project successfully licensed by the PSC in Maryland.

Fourth, from 1998 through 1999 I managed the licensing of the Utilities Commission, City of New Smyrna Beach, Florida, and Duke Energy New Smyrna Beach Power Company Ltd., L.L.P. power plant project. The project was a 500 MW gas fired, combined cycle facility. The project was issued a recommended order for certification by the administrative law judge.

I could give many more examples of similar projects. Let me conclude by saying that I have also managed or worked on power plant site selection studies in Florida (e.g., Seminole Electric Cooperative, Inc.) and elsewhere (e.g., Atlantic Electric [New Jersey]), and power plant environmental studies and permitting from Maine to Texas to Wyoming and in places like El Salvador and Pakistan. Besides the New Smyrna Beach Power Plant, I am currently managing a number of other power plant licensing/permitting projects in a number of locations.

DIRECT TESTIMONY OF JEFFREY L. MELING, P.E.

Q: Have you previously testified before regulatory authorities or courts?

A: Yes.

Q: What are your responsibilities with respect to the electrical power plant project that is the subject of this proceeding?

A: I am ECT's project manager, responsible to Panda Energy for all aspects of the licensing efforts that have been assigned to ECT. My duties include:

- Day-to-day management of technical, budgetary, and scheduling aspects of the Project.
- Providing overall technical leadership.
- Coordination of ECT's work activities and the preparation of all work products.

Q: Are you a registered professional engineer?

A: Yes, I am a registered professional engineer in the State of Texas.

Q: Are you sponsoring any exhibits to your testimony?

A: Yes. I am submitting my resume and the Statement of Qualifications for my company as Exhibits (JLM-1) and (JLM-2), respectively.

THE MIDWAY PROJECT - SITE EVALUATION

Q: Are you conducting an analysis of the proposed site for the Midway Power Project?

A: Yes, I am conducting a comprehensive licensing study to compile all needed data and information necessary for preparing all permit application documents.

Q: Please describe the steps that ECT's analysis encompass.

A: The steps involve: characterizing the site and surrounding area; characterizing the Project's conceptual features, especially discharges and emissions; and evaluating the extent to which the Project would affect its environment. By completing these steps, it is possible to analyze the Project's anticipated environmental impacts and assess the viability of the site selected for the proposed Project.

Q: What sources of information have you consulted in gathering information for ECT's analysis?

A: My project team and I have consulted a variety of available data and information on the site and its surroundings, including air quality monitoring data, information on site geology and hydrogeology, and information on land use, to cite a few examples. In addition, the ECT project team has completed several field studies of its own, including phase I and phase II environmental assessments, wetland assessments, characterization of the site's ecological resources and a monitoring program to determine existing noise levels.

Q: Please summarize the results of ECT's analyses thus far.

A: ECT has found that the proposed site is well-suited to its use for the Panda Midway Power Project. Through the use of modern, state-of-the-art generation technology, clean natural gas fuel, air quality impacts will be minimal, and no sensitive receptors will be noticeably affected. To the extent that the Project's electrical generation displaces older, dirtier, less efficient facilities, its impact on regional air quality will be positive. The Project's use of treated

effluent from the City of Port St. Lucie's wastewater treatment plant (WWTP), will supply as much of the plant's water needs as possible, thereby minimizing the amount of ground water withdrawals. And the Project's use of this WWTP effluent will reduce the WWTP's discharges to underground injection wells, another positive environmental aspect associated with the Project. Since wastewater discharges from the plant (except storm water) will be returned to the City of Port St. Lucie's underground injection well system, there will be no discharges to surface water bodies. Impacts to other ecological resources will be minimal since the developed portion of the site has no native vegetative communities, and due to the plant's relatively small land requirements and minimal emissions and discharges. The property is currently located in St. Lucie County within the Mixed Use land use designation (Comprehensive Plan) and Industrial Heavy Zoning district. Access to the Project site will be by Midway Road, a two-lane road. Traffic impacts during construction will be short term in nature and minimized by the use of an off-duty law enforcement officer to control traffic during peak periods, if necessary.

Of course, from an economic perspective, the Project will have the positive impacts of jobs, economic activity to support construction and operation, revenues to the City of Port St. Lucie from sale of water, and tax revenues.

Q: What are the major findings of your analysis thus far?

A: The major findings of ECT's analysis of the site address air resources, water resources, ecology, and land use and socioeconomic aspects of the site and Project. These are discussed individually below.

Air Resources

The Project site is located in an attainment area for all criteria pollutants and a PSD Class II area for particulate matter, sulfur dioxide, and nitrogen dioxide. The nearest PSD Class I area to the site is the Everglades National Park, which is located approximately 178 kilometers to the south. Ambient air pollutants have concentrations below ambient air quality standards at the nearest locations for which data are available.

Given the exclusive use of clean natural gas for fuel and, the Midway Power Project's combustion-related emissions are expected to result in air quality impacts that are less than the significant impact levels for

particulate matter, sulfur dioxide, nitrogen dioxide, and carbon monoxide. The significant impact levels are well below the state and federal ambient air quality standards and the prevention of significant deterioration increments. The Project's air emissions are not expected to adversely affect the air quality related values in the Everglades National Park PSD Class I area.

Water Resources

The topography of the site allows for drainage to both the north and the south, thus allowing for Project storm water outfalls in both directions.

The site is within the jurisdiction of the South Florida Water Management District. The Project's storm water management systems can and will be designed and constructed to meet the District's water quality and water quantity regulations.

The Project's water use requirements are expected to be supplied by the City of Port St. Lucie Water Utility. Much of this water will be treated effluent from Port St. Lucie's WWTPs. The remaining water needs will be supplied from Port St. Lucie's municipal well field into the Upper Floridan and surficial aquifers. These aquifers are capable of producing significant quantities of ground water that meet the requirements

of the proposed Project. A portion of the plant's water supply needs may be met with onsite wells into the Upper Floridan aquifer. Water treatment will be provided prior to use.

Cooling tower blowdown and process wastewater streams will be discharged back to the City of Port St. Lucie's injection well system. No industrial or sanitary wastewater will be discharged to any surface waters. As a result, the Project will have little or no impact on surface waters, since no wastewater streams (other than storm water runoff) will be discharged to surface waters.

Ecology

The plant site encompasses approximately 74 acres of land under private ownership. The current use of the land is as cattle grazing pasture. Other than the pastureland, the site contains five disturbed wetlands that are all situated along the property boundaries. The wetlands have all been disturbed through past and current agricultural activities. Cattle trample and graze along the wetland edges, and a network of ditches has resulted in an alteration of past wetland hydroperiods via drainage. In addition, historical disturbances have contributed to the invasion by opportunistic nuisance and exotic species of vegetation

within these wetlands. The invasion by undesirable plants further reduces the overall quality and value of these wetlands when compared to relatively undisturbed similar wetlands in the region. No listed species of plants were observed onsite. Two sandhill cranes were seen nesting in the largest wetland located at the southwestern corner of the property. Since the plant facilities are going to be placed in the central area of the site, it is anticipated that the development of the proposed power plant will have only a minimal impact to the wetlands. However, the exact area of wetland impact is not known at this time. It is anticipated that power plant construction will not intrude upon the central portion of the wetland located at the southwestern corner of the property. Therefore, in summary, the development of the power plant should not have a significant impact on ecological resources at the plant site. Any impacts to wetlands will be mitigated by enhancing the existing onsite wetlands that will not be affected by development.

Land Use and Socioeconomics

The property is currently located in St. Lucie County within the Mixed Use land use designation (Comprehensive Plan) and Industrial Heavy Zoning district. Panda is seeking annexation into the City of

Port St. Lucie. A plan amendment request has been submitted to designate the site Utility.

The onsite land uses are currently open field and wetland vegetative communities. Surrounding land uses are unoccupied parcels to the north across Midway Road, an electrical substation and Interstate 95 to the east, improved pasture to the south, and an agricultural (vegetable farming) operation to the west. No residential or commercial development occurs on or adjacent to the site. There are at least two individual residences within a one-mile radius, and there are land use approvals for residential development to the southwest of the property.

The site does not currently provide any public land use such as parks, recreation areas, or natural resource areas.

The Project will have a positive effect on local economies. The need for a construction workforce will mean more employment opportunities and direct/indirect economic expenditures in the immediate area. Upon completion, the Project will provide an economic and reliable source of clean energy for Florida and provide water sales revenue to the City of Port St. Lucie as well as property, retail sales, income, and corporate taxes to the city and/or county. No significant impacts

to existing infrastructure or essential services are anticipated due to the relatively small workforce required for plant operation.

In summary, the Project will be consistent with the land use plan description and the applicable zoning district and will provide social and economic benefits, with minimal environmental impact to the residents and natural resource areas of the City of Port St. Lucie and St. Lucie County.

Q: What is the licensing schedule for the Midway Power Project?

A: The current plan is to submit the site certification application (SCA) in May. Project construction is anticipated to begin in October 2001, with commercial operation scheduled for the second quarter of 2003.

Q: Do you have a conclusion with respect to the ability of the Midway Power Project to obtain all necessary licenses within the time frames described in the licensing schedule?

A: Yes, I do.

Q: What is your conclusion?

A: Based on our analyses, ECT has concluded that the site is appropriate for the Midway Power Project, that the site can support the Project as proposed, and that the Project as proposed can obtain all necessary licenses and approvals within the times allotted in the licensing schedule.

Q: Does this conclude your direct testimony?

A: Yes, it does.

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JEFFREY L. MELING, P.E.
Principal Engineer

Areas of Specialization

Power Plant Licensing and Permitting, Air Pollution Source Permit Applications, Air Quality Impact Dispersion Modeling Studies, PSD Regulations and Permitting Strategy, Clean Air Act Regulations, Ambient Air Monitoring Plans, Monitor Siting, Criteria and Toxic Pollutant Emission Inventories and Impacts Assessments

Relevant Experience

Project Manager; New Smyrna Beach Power Project Licensing, Duke Energy North America—Overall manager for the environmental licensing of the first non-utility power project to undergo review via the Florida Electrical Power Plant Siting Act (FEPPSA). Responsible for the preparation of the 5-volume Site Certification Application (SCA) describing the existing environment, the proposed project, and the project's predicted environmental impacts. SCA also included prevention of significant deterioration (PSD) and consumptive use permit (CUP) applications and a detailed water supply alternatives analysis. Responsibilities also included extensive negotiations with water management district concerning water supply and testimony to the Florida Public Service Commission regarding the need for the project. Additional expert witness testimony was given in the SCA licensing hearings.

Project Manager; Brandywine Cogeneration Facility Licensing, Panda Energy Corporation—Responsible for all environmental permits associated with a proposed 230-MW combined cycle (CC) cogeneration plant in Brandywine, Maryland. The facility was the first nonutility generating plant successfully licensed under Maryland's CPCN regulatory process. Environmental disciplines include air quality, water appropriations and pump testing, storm water management, ecology, noise, and socioeconomics/land use. Permitting also addressed approximately 30 miles of linear facilities, including, electric transmission line, gas pipeline, and treated effluent pipeline. Expert testimony was provided before the Maryland PSC.

Project Manager; Magic Valley Generating Station Permitting, Calpine Corporation—Responsible for all environmental permits required for a 700-MW CC merchant power plant in Hidalgo County, Texas. Plant utilizes state-of-the-art natural gas-fired generation technology. Permitting requirements include air quality (PSD), NPDES, state industrial wastewater discharge, storm water discharge, linear facilities, and local permitting. NPDES permitting involved EPA Region VI and required preparation of a comprehensive, multidisciplinary environmental information document (EID) to support EPA's preparation of an environmental assessment (EA) to comply with NEPA. EID addressed existing conditions and impacts associated with water and air quality resources; biological/ecological resources; land use, cultural, and aesthetic resources; and noise. It also fulfilled NEPA requirements by conducting alternatives analyses for the project site, generation technology, water sources and discharges, and environmental control systems. Responsibilities also included extensive coordination with various federal, state, and local agencies.

Project Manager; Cogeneration Facility Licensing, Mission Energy Company—Managed the multidisciplinary site evaluation and licensing efforts for a 150-MW CC cogeneration facility in Auburndale, Florida. Individual permits included air quality (PSD), water use, wastewater treatment and discharge, and storm water management.

Task Manager; Polk Power Station Licensing, Tampa Electric Company (TEC)—Responsible for air quality analyses done in support of licensing a 1,150-MW integrated gasification combined cycle (IGCC) and standard CC power generation facility in Polk County, Florida, under the FEPPSA. This included ambient air monitoring planning and implementation, rigorous multi-source air quality modeling using ISC and MESOPUFF-II, and control technology assessments.

Project Manager; Kathleen Cogeneration Plant Permitting, Panda Energy Corporation—Successfully managed multidisciplinary permitting efforts for a 150-MW gas- and oil-fired CC plant and associated linear facilities near Lakeland, Florida. Permitting tasks included PSD, water use, storm water management, wetlands/dredge-and-fill, and local land use/zoning/site plan approval. Worked with local industrial plants on possible water reuse opportunities. After all permits were issued, worked with Panda on permit modifications for possible reconfiguration of project.

Project Manager, Texas Merchant Plant Permitting, Panda Energy International/Texas Independent Energy—Manager for all environmental permitting associated with four 1,000-MW merchant power plant projects located at Paris, New Braunfels, Wichita Falls, and Odessa, Texas. Permitting included air quality (PSD), wastewater discharge, and dredge-and-fill (Section 404) permitting for sites and linear facilities.

Project Manager; Central Florida Site Selection Study, Seminole Electric Cooperative, Inc. (SECI)—Managed the identification and evaluation of potential sites for a future 440-MW facility in central Florida. Evaluations focused on air quality and water resources licensing constraints, and proximity to fuel supplies and other infrastructures.

Task Manager; Martin Power Plant Environmental Impact Statement (EIS), Florida Power & Light Company—Managed the air quality evaluations contained in the EPA EIS for the proposed 1,600-MW coal gasification/combined cycle (CG/CC) expansion in Martin County, Florida. Key issues addressed in the EIS related to SO_2 impacts relative to air quality standards, appropriate emission control technologies, health effects due to emissions of toxic air pollutants, odor impacts due to fugitive H_2S emissions, and air emissions associated with rail transport of coal and coal by-products.

Project Manager; FGD Scrubber Permitting, Atlantic City Electric (AE)—Prepared the air and water allocation permit applications for the addition of SO_2 controls to the existing B.L. England coal-fired electrical generating station in New Jersey. Controls were mandated by the Clean Air Act Amendments of 1990. Air application included a detailed dispersion modeling study. Water allocation effort included a 72-hour pump test and rigorous drawdown model calculations.

Task Manager; Site Selection Study, TEC—Managed the air quality aspects of site selection for TEC's planned 440-MW CC and 500-MW coal-fired units in central Florida. Presented results each month to the public Task Force which was asked to provide input to TEC.

Project Manager; Power Plant Licensing, AE—Was responsible for identification and execution of licensing needs for two 75-MW combustion turbine (CT) facilities. Also in charge of air quality modeling and permitting and negotiations with New Jersey Department of Environmental Protection, as well as assigned an active role in working with the CT vendors to expedite permitting.

Task Manager; Site Evaluation Study, Southern Electric International, Inc.—Assisted in the evaluation of four potential power plant sites in Florida, focusing on potential air quality regulatory constraints including PSD Class I and II increments, and nonattainment issues. Key issues for two sites were the sites' proximity to public airports. Relevant FAA and Florida Department of Transportation regulations were researched and applied to the potential sites.

Project Manager; Air Permitting, Reedy Creek Energy Services—Assisted in developing BACT information for a 38-MW cogeneration addition. Also helped identify best permitting strategy and in negotiations with the Florida Department of Environmental Protection.

Task Manager; Siting Study, SECI—Responsible for evaluating air quality considerations in the selection of a site for a new 660-MW CC power plant in Florida. Study area covered a large portion of the state.

Project Manager; Power Plant Permitting, Jersey Central Power & Light Company (JCP&L)—Prepared PSD-level dispersion modeling studies to support licensing of 80-MW CT facilities at two sites—one in complex terrain.

Task Manager; Monitoring Program, JCP&L—Prepared ambient air quality monitoring plans for CC facilities at two sites in New Jersey. One site was located in an area of complex terrain.

Project Manager; PSD Permit Application, Anheuser-Busch Companies/Metal Container Corporation (MCC)—Prepared the PSD permit application for MCC's proposed southeast can plant, to be located in northwest Georgia. Application included best available control technology (BACT) review, complex terrain modeling, an air toxics assessment, and an analysis of potential effects of proposed VOC emissions on the Atlanta ozone nonattainment area.

Project Manager; PSD Permit Application and Air Toxics Modeling Analysis, Anheuser-Busch Companies/MCC—Prepared the complete permit application and modeled emissions of n-hexane and other pollutants in support of a PSD permit application related to a planned facility expansion in Florida. Modeling addressed compliance with FDEP air toxics "no-threat" levels.

Task Manager; RCRA Permitting, Hunter Industrial Facilities, Inc. (HIFI)—Managed the air quality studies in support of a proposed hazardous waste processing and disposal facility in Dayton, Texas. The facility was designed to solidify hazardous waste for disposal in subterranean caverns solution-mined from salt dome formations. Key air quality efforts were air quality control systems conceptual design, air toxics impact assessments, negotiations with state agency personnel, and support in public hearings.

Project Manager; PSD Modeling, Three Kaolin Clay Manufacturers—Performed PSD modeling of PM and NO_x for expansions at three Kaolin clay plants in Georgia. All three projects involved interfacing with Georgia DNR to define regulatory and modeling requirements. Detailed modeling reports were submitted to Georgia DNR. One of the projects concerned the addition of cogeneration facilities.

Senior Engineer/Project Manager; Permit Applications for Various Clients—Primary responsibility for preparation of permit applications and air quality impact dispersion modeling studies. Completed a number of TACB, Oklahoma, and PSD permits applications, including the air quality analyses. One permit application involved a public hearing, submittal of a formal air quality analysis, and providing expert testimony regarding the development of emissions estimates and the execution of the modeling study.

Project Engineer; Various Projects Related to Permitting and Compliance for Confidential Clients—Assisted an oil-refining client in addressing TACB concerns regarding potential odor problems that could result from a switch to sour crudes. Also conducted an atmospheric corrosion monitoring program as part of a TACB compliance evaluation. In addition, participated in several projects related to permitting and compliance with the RCRA hazardous waste regulations.

Staff Environmental Engineer; Preparation of Nationwide Emissions Inventories, EPA—Prepared nationwide emissions inventories of PM and SO_2 for both natural and manmade sources; and researched the particle characteristics, size distribution, and chemical compositions of the emissions.

Project Manager; EPA Air Quality Criteria Document—Authored chapter concerned with sources and emissions for EPA's *Air Quality Criteria Document for Particulate Matter and Sulfur Oxides.*

Project Manager; Acid Rain Study, American Gas Association—Directed a study to assess the role of compressor station NO_x emissions in acid rain. Included preparation of nationwide compressor engine NO_x emission inventories and dispersion modeling studies. Potential errors in existing inventories were identified.

Project Engineer; Acid Rain Study, EPA—Participated in an EPA study of the acid rain problem. Responsibilities included the management of a computerized emissions inventory describing major industrial and utility emitters of SO_2 in the eastern two-thirds of the United States.

Task Manager; Environmental Assessment, Bureau of Land Management (BLM)-Performed dispersion modeling in support of a BLM EIS for proposed coal-lease tracts in Colorado and Wyoming. Short- and long-term modeling for 30 lease tracts was performed to assess the impacts of their development.

Staff Engineer; Trace Element Emissions Evaluation, Houston Power & Light—Quantified potential trace element emissions from coal-fired boilers. Also conducted an air quality modeling analysis of two coal-fired industrial boilers proposed for construction in the Houston, Texas, area.

Staff Engineer; Air Monitoring Networks Study—Project involved study of air monitoring networks and ambient air quality in the El Paso, Texas, area.

Task Manager; Control Options Review, State of Alaska—Conducted a review of various options available to control air emissions from a large petrochemical complex.

Project Manager; Toxic Air Pollutants Study, EPA, Region III—Directed a study to estimate, in detail, the sources and emissions of toxic air pollutants in Virginia. Identified potential emission sources of 61 toxic air pollutants using Virginia emission inventory information, chemical *use trees*, EPA literature, and other information.

Research Assistant; Various Air Quality Research Tasks, University of Illinois—Responsible for the performance of various air quality research tasks related to the Ohio River Basin Energy Study, an EPA technology assessment of energy development impacts. Developed a model describing the variability of SO_2 emissions from coal-fired utility boilers equipped with flue gas desulfurization systems.

Junior Engineer; Wastewater Treatment Facility Design, Greeley and Hansen and Associates—Participated in the design of water and wastewater treatment facilities in Chicago, Illinois. Designed small municipal well-water pumping/chlorination station.

Education

M.S.	Environmental Engineering University of Illinois	1979
B.S.	Civil Engineering University of Illinois	1977

Registrations/Certifications

Professional Engineer, Texas, No. 56714

Affiliations

Air Pollution Control Association
Xi Epsilon
Tau Beta Pi
Phi Kappa Phi

Publications

Meling, J.L. 1991. Inhalation Cancer Risk Assessment for a Proposed 1,600-MW CG/CC Power Plant. Presented at the 83rd Annual Meeting of Air & Waste Management Association.

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Meling, J.L. 1985. Air Quality Analysis: Summary of Air Quality Modeling. Submitted in Support of Contested Permit Hearing. Waid and Associates.

Meling, J.L., and R.J. Davis. 1984. Potential Sources of Toxic Air Pollutant Emissions in Virginia. EPA Contract 68-02-3513.

Meling, J.L. *et al.* 1983. Preliminary Assessment of the Role of Gas Transmission Station Emissions in Acid Rain. Radian DCN 83-244-008-03.

Meling, J.L., Braddock, J.N., and Winchester, J.W. (Principal Authors). 1982. "Sources and Emissions." Chapter 4 of Air Quality Criteria for Particulate Matter and Sulfur Oxides (3 volumes). EPA-600/8-82-029.

Ball, J.G., Muela, C.A., and Meling, J.L. 1982. Acid Rain Mitigation Study, Volume III: Industrial Boilers and Processes. EPA-600/2-82-070c.

Baasal, W.D., Ball, J.G., and Meling, J.L. 1982. "Cost for Control of SO_2 Emissions." Chemical Engineering Progress, Vol. 78, No. 6, pp. 47-53.

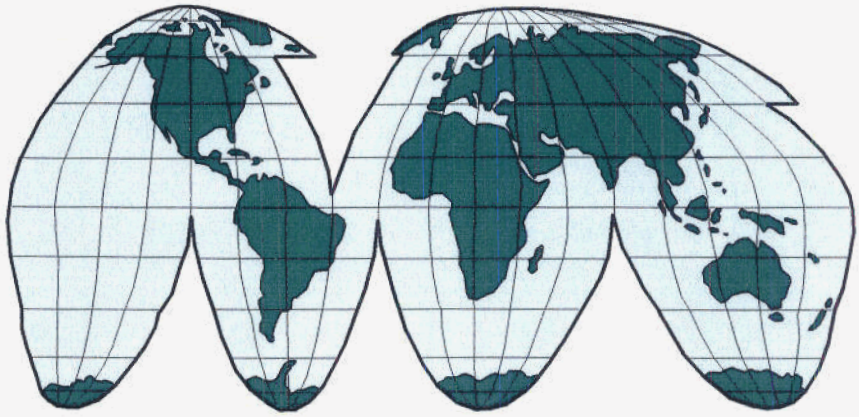
Meling, J.L. 1982. A Case for Reevaluating Procedures Used to Estimate Residential Natural Gas Consumption. Presented at the 75th Annual Meeting of the Air Pollution Control Association.

Schmidt, A.E., and Meling, J.L. 1981. Air Quality Analysis for SO_2 and NO_2 for Coal-Fired Boilers in Texas City, TX. Radian DCN 81-121-328-02.

Hoover, J.R., and Meling, J.L. 1980. Source Category Survey: Animal Feed Defluorination Industry. EPA-450/3-80-015.

Meling, J.L. 1979. Possible Conflicts Between NSPS and PSD Regulations Pertaining to SO_2 Emissions from Coal-Fired Electrical Generators. University of Illinois Office of Energy Research.

STATEMENT OF QUALIFICATIONS
WORLDWIDE
ENVIRONMENTAL SERVICES
TO THE
POWER GENERATION INDUSTRY



ECT

Environmental Consulting & Technology, Inc.
3701 Northwest 98th Street
Gainesville, Florida 32606

FPSC Docket No. 000289-EU
Panda Midway: Meling
Exhibit (JLM-2)

ECT—AN INTRODUCTION

Environmental Consulting & Technology, Inc. (ECT), is a full-service environmental consulting firm offering a broad range of scientific, engineering, planning, and management services. In today's business climate of increasingly complex environmental issues, regulations, and requirements as well as increasing public and private sector awareness of environmental issues, ECT offers a unique alternative to meeting the diverse environmental service needs of our clients.

ECT was founded on the business principle that responsive client service and client satisfaction come first and foremost. ECT achieves this goal through a simple formula—the personal commitment of highly qualified, experienced professionals plus the corporate commitment of consistently providing the highest quality services on time and within budget.

People make the difference in the environmental consulting business. ECT's professional scientists, engineers, and support staff have a consistent and proven record of success in meeting the service needs of private industry and public sector clients. ECT specializes in the resolution of complex environmental problems and issues through:

- Cost-effective project planning.
- Experienced project management.
- Proven engineering and scientific applications.

ECT's environmental professionals listen to their clients' specific needs and develop a thorough understanding of the requirements of a specific project prior to designing solutions. Integral to our quality program is our conformance to these specific project requirements. Responsive communications and accountability to our clients throughout the project are key elements in ECT's record of success.

ECT provides multidisciplinary environmental services throughout the United States via a growing network of full-service offices, to-date:

- Gainesville, Tampa, Fort Lauderdale, Fort Myers, Jacksonville, Tallahassee, and Orlando, Florida.
- Detroit and Brighton, Michigan.

Your benefits in choosing the ECT team to meet your project's diverse environmental service needs include:

- Full range of environmental (scientific, engineering), planning, and management consulting services.
- Highly qualified, experienced professional staff.
- Commitment to highest quality in all services.
- Experience and effective project management to meet project budgets and schedules.
- Cost-effective services through sound business practices.
- Proven record of successful performance.

ECT's professional capabilities include a comprehensive range of consulting service areas focused on the environmental needs of its private and public sector clients. These diverse capabilities are provided through the following major service categories:

- **Environmental Monitoring, Baseline Descriptions, and Impact Assessments**
  - Surface water and ground water
  - Terrestrial and aquatic ecology
  - Meteorology and air quality
  - Oceanographic, limnologic, and coastal environments
  - Geology and geotechnical
  - Noise
  - Socioeconomics, land use, planning
  - Mobile monitoring station design and construction

- **Environmental Siting, Licensing, and Permitting**
  - Industrial facility site selection studies
  - Environmental assessments (EAs) and impact statements (EISs)
  - Power plant/cogeneration licensing and permitting
  - Electrical transmission/pipeline siting and licensing
  - Waste water discharge and storm water permitting (NPDES and local)
  - State and federal (PSD) air quality modeling and permitting
  - Ground water monitoring plans
  - Ground water impact mitigation plans
  - Dredge-and-fill permitting
  - Mine permitting and EAs/EISs
  - Acid rain implementation plans
  - Wetlands delineation and mitigation

- Ocean/surface water intake/discharge permitting
- Public participation/information programs
- Permitting feasibility studies

- **Toxic and Hazardous Material Management and Control**
  - Material inventorying
  - Spill prevention, control, and countermeasure (SPCC) plans; facility response plans
  - Hazardous waste contingency plans and procedures
  - Contamination investigations and assessments
  - Remedial investigations/feasibility studies
  - Remedial action planning and design
  - Pollutant fate and effect studies
  - Risk assessments
  - Health and safety planning and training
  - Waste minimization

- **Storage Tank Assessments and Management**
  - Hydrogeologic site assessments
  - Contaminant plume identification, modeling, and mapping
  - Soil gas and geophysical surveys
  - Monitoring well installation and sampling
  - Contaminant recovery system design and installation
  - Tank removal and soil excavation management
  - Site remediation services
  - Tank closures
  - Terminal facility SPCC and operation plans

- **Environmental Audit and Liability Management**
  - Real estate transactional audits
  - Commercial and industrial loan audits
  - Operational compliance audits
  - Environmental risk and liability management
  - Site assessments, sampling, and analyses
  - Remediation alternative evaluations
  - Economic feasibility analyses
  - Disposal contractor audits

- **Planning**
  - Comprehensive planning
  - Master planning/site planning
  - Socioeconomics
  - Land use analysis
  - Rezoning
  - Development order negotiations
  - Landscape architecture

- **Engineering Services**
  - Civil site design and development
  - Waste water treatment evaluation and design
  - Harbor and marina design
  - Beach stabilization and renourishment
  - Storage facility planning and design

- **Regulatory Compliance Services**
  - Resource Conservation and Recovery Act (RCRA)
  - Superfund Amendments and Reauthorization Act (SARA)
  - Right-to-Know and HAZCOM Regulations
  - Clean Water Act
  - Clean Air Act
  - Safe Drinking Water Act
  - Toxic Substances Control Act (TSCA)
  - Occupational Safety and Health Act (OSHA)
  - National Environmental Policy Act (NEPA)

- **Asbestos Consultation**
  - Building surveys
  - Abatement design
  - Renovation/restoration design
  - Project monitoring
  - Training

- **Industrial Hygiene**
  - Develop health and safety plans
  - Recognition, evaluation, and control of environmental factors which may relate to worker illness or impaired health
  - Hazardous waste assessment, remediation, and monitoring
  - Radon
  - Indoor air quality/sick building syndrome
  - Occupational toxicology
  - Worker training
  - Ergonomics
  - Heat stress monitoring
  - HAZCOM plans

The ECT professional team's expertise, experience, and commitment are unsurpassed in the industry. Every client and project, large and small, receive personal attention and corporate commitment to ensure quality products, successful performance, and client satisfaction.

ECT'S PROFESSIONAL TEAM

Paramount to success in the environmental consulting business are the people that comprise the organization. ECT was founded by a team of environmental professionals with extensive experience in the environmental consulting business. Since its founding in 1988, ECT has grown through the addition of highly qualified professionals and technical support staff. Today, more than 140 highly qualified scientists, engineers, and support staff comprise ECT.

ECT's professional staff represents a wide range of environmental, scientific, and engineering expertise and experience including:

- Senior project managers
- Professional engineers
- Professional geologists
- Certified industrial hygienists
- Meteorologists
- Air quality scientists
- Coastal engineers
- Oceanographers
- Limnologists
- Hydrologists
- Water quality scientists
- Geohydrologists
- Geotechnical scientists
- Terrestrial ecologists
- Aquatic ecologists
- Chemical engineers
- Environmental chemists
- Hazardous and toxic materials specialists
- Environmental auditors
- Planners
- Socioeconomists

A summary of ECT's key senior personnel qualifications and power-related experience is presented in Table 1.

ECT's senior professionals have extensive experience in the overall planning and management of projects throughout the Unites States and the world. Team members have successfully managed environmental projects ranging in size from small, specialty projects with budgets of less than $1,000 to large, multidisciplinary efforts with values in excess of $5,000,000.

ECT'S EXPERIENCE

ECT's staff members have successfully provided environmental services involving over 7,000 projects throughout the United States and worldwide to a diversity of private and public sector clients. More than 70 percent of these projects were conducted for repeat clients which clearly demonstrates the ECT team commitment to the highest levels of quality technical services and client satisfaction. The ECT team's extensive experience base has involved projects for:

- Industry (domestic and international)
- Public utilities
- Federal, state, and local agencies
- Law firms
- Banking and insurance companies
- Architect and engineering firms
- Private developers and real estate entities

ECT's staff has extensive experience in siting, licensing, environmental assessment, and permitting of electrical generating plants, transmission corridors, and associated facilities including fuel and water pipelines throughout the world.

ECT staff experience includes over 50 major wetland jurisdictional determinations for utility facility and the siting, licensing, and environmental assessments for over 15,000 megawatts (MW) of new generation. ECT staff has been involved in over 100 power plant projects worldwide.

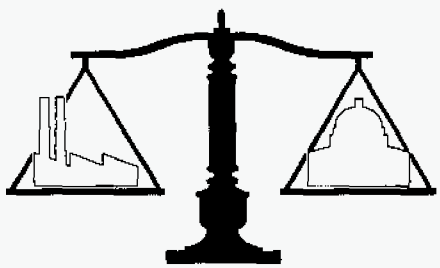
Of particular note is the unequaled experience of the ECT team in major utility siting and electric transmission corridor studies. The ECT team also has considerable experience in preparing federal and state EAs and EISs for a variety of energy-related projects such as SCAs in Florida, Certificate of Public Convenience and Necessity (CPCN) in Maryland, coastal zone EISs in New Jersey, and EISs under U.S. Environmental Protection Agency (EPA), Rural Utilities Service (RUS), NEPA requirements, and World Bank guidelines.

Selected ECT power-related experience in siting, licensing, permitting, and assessment studies is presented in Table 2. ECT's power plant experience

within the eastern United States is depicted in Figure 1 and staff experience within the United States is depicted in Figure 2. ECT staff have also provided a wide variety of power-related and other environmental services outside of the 48 contiguous United States as shown in Figure 3. These worldwide services are summarized in Table 3. Following Table 3 are descriptions of some representative power project that ECT has performed.

ECT'S RESOURCES

A professional team of environmental consultants such as ECT's must be backed up by the essential facilities and equipment. The most essential equipment and software are listed below:



Computers and Peripheral Equipment

- Dual Pentium®-based Windows NT® network
- Novell® networks
- Pentium-based work stations
- Laser printers
- Dot matrix printers
- Inkjet color printers
- Digitizing boards
- Scanners
- Full-size color plotting capabilities
- Internet access
- Automated backup systems with high-capacity 8-mm tape drives
- CD-writing capabilities
- Virus protection
- Zip drive

Miscellaneous Software

- ArcInfo®, ArcCAD®, ArcView®, and GRASS geographic information systems (GISs)
- AutoCAD® Version 14 AutoCAD map
- MicroStation® 95 (CADD)
- Corel® 6 (graphics)
- WordPerfect® Version 5.1 through 7.0 (word processing)
- Word® for Windows, Version 6 through Word97®
- Lotus 1-2-3® Versions 3.2 and 5.0 (spreadsheet)
- Quattro Pro® Version 5 (scientific spreadsheet)
- Excel Version 6 (spreadsheet) through Excel97®
- Power Point 4 (presentation package) through Power Point 97
- WordPerfect Presentations 7 (presentation package)
- Grapher® (data analysis, curve fitting, graphing, etc.)
- Surfer® and WinSurf® (contouring package, etc.)
- Timeline® Version 7 (project management)
- ABStat® (statistics package)
- dBaseIV® (relational database)
- Paradox® Version 7 (relational database)
- STAR (joint frequencies)
- WROSE (wind roses)
- As well as various Fortran compilers for programming

Numerical Models

Air

BLP	Stationary line source dispersion model
CALINE3	Highway traffic dispersion model for non-reactive pollutants
CDM 2.0	Climatological, long-term urban area dispersion model
RAM	Multiple point and area source, short-term dispersion model
ISC3	Industrial source complex long- and short-term dispersion models
MPTER	Multiple source, simple terrain dispersion model
CRSTER	Single source, simple terrain dispersion model
UAM	Urban area, three-dimensional numerical ozone dispersion model
CTDMPLUS	Complex terrain refined dispersion model
COMPLEX I	Complex terrain screening dispersion model

CTSCREEN	Complex terrain screening dispersion model
SHORTZ	Short-term complex terrain screening dispersion model
LONGZ	Long-term complex terrain screening dispersion model
RTDM 3.2	Complex terrain screening dispersion model
SCREEN3	Single source screening dispersion model
PLUVUE II	Single source visibility model
VISCREEN	Visibility screening model
DEGADIS 2.1	Dense gas dispersion model
SPILLS	Dense gas dispersion model
CHARM®	Dense gas dispersion model
VALLEY	Complex terrain screening dispersion model
EDM	Airport emission source dispersion model
MESOPUFF II	Long range transport dispersion model
HGSYSTEM	Hydrogen fluoride and dense gas dispersion model
SDM	Shoreline, fumigation dispersion model
OCD	Offshore, coastal region dispersion model
SLAB	Dense gas dispersion model
AVACTA II	Long range transport dispersion model
PAL-DS	Short-term point, line, and area source dispersion model
RPM-IV	Single source, reactive pollutant dispersion model
MOBILE5b	Mobile source emission estimation model
BPIP	Building downwash pre-processing program
PCRAMMET	Meteorological data pre-processing program
CHAVG	Post-processing program for developing running averages
MPRM	Meteorological data pre-processing program

Surface Water

HEC-1	Surface runoff hydrograph
HEC-2	Flood routing
HEC-6	Sediment transport in rivers
STORM	Storm water runoff
TR-20	Storm water runoff
SWMM-IV	Storm water management
HSPF	Surface runoff and runoff quality
NPS-II	Non-point source runoff water quality
ARM-II	Agricultural runoff quality
QUAL2E	Riverine water quality
RECEIV-II	Receiving water quality
CAFE	Two-dimensional estuarine or lake circulation
DISPER	Two-dimensional estuarine or lake circulation
PLUME	Near-field mixing zone model
SIM	Salinity intrusion model
DEM	Dynamic estuarine model
CORMIX1	Mixing zone analysis model (single port diffuser)
CORMIX2	Mixing zone analysis model (multi-port diffuser)
CORMIX3	Mixing zone (surface single- or multiport diffuser)
FORFLO	Forest floodplain succession model
RMA2	Two-dimensional circulation and dispersion model
SMS/BOSS	Two-dimensional circulation and dispersion model
BASINS	GIS-based watershed and water quality model
GENESIS	Shoreline movement model
SBEACH	Beach erosion model
RCPWAVE	Wave refraction model
adICPR	Interconnecting pond routing model
EXTRAN	Dynamic flow routing model

Ground Water

MOD INV	Parameter optimization
MODFLOW	USGS, 3-D ground water flow model
MODFLOW EM	Extended memory version
MODPATH	USGS, 3-D particle tracking program
PRE/POST MOD	Pre- and post-data processor for MODFLOW
MODRET	MODFLOW for retention ponds
ZONEBUDJET	Subregion zone, budget package
MOC	USGS, 2-D solute transport and flow model
PREMOC	Pre-data processor for MOC
MOC NRC	USGS MOC Code modified for Nuclear Regulatory Commission
PREMOCNRC	Pre-data processor for MOCNRC
MT3D	3-D contaminant transport model
PLASM	Prickett & Lonnquist, 2-D, aquifer simulation model

RANDOM WALK	Prickett & Lonnquist particle tracking program
AQTESOLV	Geraghty & Miller aquifer test solving program
SUTRA	USGS, 2-D saturated/unsaturated transport and flow model
WHPA	IGWMC wellhead protection area program
MODELCAD	Geraghty & Miller model preprocessing computer aided drafting system
BIO PLUME II	RIFA, simulation of transport and biodegradation of dissolved hydrocarbons
ROKEY SYSTEM	3-D, analytical contaminant transport model
LUCKY 7/ NO DCAY	Parameter estimation models

Although ECT has found it more cost effective to lease certain pieces of specialized equipment, we do maintain most standard environmental equipment in our inventory. This equipment includes:

- **Meteorology and Air Quality Monitoring Equipment**
  - Meteorological observation kit
  - Meteorological monitoring system
  - SO2 analyzers
  - O3 analyzers
  - PM10 high-volume samplers
  - 2- and 3-pen recorders
  - Calibration equipment
  - Equipment shelters
  - Data acquisition systems and software

- **Geology and Geohydrology**
  - Organic vapor analyzers
  - Photoionization detectors
  - Assorted bailers
  - Augers
  - Sampling and purging pumps
  - Slug testing system
  - Assorted water quality meters
  - Explosimeters
  - Oil-water interface probe
  - Soil venting system
  - Soil Gas vapor probe
  - Free-product recovery system

- **Surface Water Equipment**
  - Hydrolab® Surveyor II water quality meter
  - Checkmate® water quality meters
  - YSI® temperature-conductivity meter
  - Teledyne Gurley® current meters
  - Turner Designs® Model 10-005 fluorometer
  - Water sampling bottles
  - Leupold & Stevens® water level/tide recorders
  - Fathometer
  - LORAN navigation system
  - Marine radios

- **Ecology Survey Equipment**
  - Ponar grab
  - Assorted seine nets
  - Trawl nets
  - Electroshocker
  - SCUBA equipment
  - Assorted 35-mm cameras and lenses
  - Underwater 35-mm camera
  - Underwater video camera
  - Sherman live traps

- **Industrial Hygiene**
  - Explosimeters
  - Asbestos sampling equipment
  - Stereo microscopes (for asbestos)
  - SKC personal sampling pumps
  - Precision sound level meters
  - Noise dosimeters
  - Beta-gamma detectors
  - Draeger samplers

- **Miscellaneous**
  - Vehicles (4WD, etc.)
  - Survey equipment
  - Electronic planimeters
  - Stereoscopes
  - Portable electric generators
  - Safety equipment (Level A through D)
  - Self-contained breathing apparatus
  - Metal detector
  - Electronic depth finders
  - Global positioning system

ECT has a record of consistently satisfying our client's needs with respect to environmental services. Representative client references are provided in Table 4.

PROJECT ADMINISTRATION

We believe that the key to success in business is a strong program of project management, accountability, and control coupled with high technical achievement and a strong corporate quality program. Responsive project management is the most important element in attaining professional quality in a timely manner and in successfully meeting the challenge of major, multidisciplinary projects. ECT's management program is designed to optimize technical quality control while maintaining flexibility to meet changing project needs and exerting positive, effective controls over project costs and schedules. Finally, ECT's management structure is designed to provide for effective and responsive client communications, which are essential for successfully completing a project.

ECT maintains a computerized job cost accounting and progress tracking system for project control in four major areas—technical achievement, communications, budget, and scheduling. This standardized project reporting system is supported by a well-defined system of responsibility and accountability. Project managers are provided weekly and monthly status reports summarizing data on cost, schedule, and technical status for each project. Thus, the project manager has timely information to assess the project's progress and to determine which areas require management control.

Our project control system not only provides for effective internal budget and progress control, but also provides the client with timely, accurate information for external project monitoring and accountability. At any time during the project performance, clients may have access to and/or audit ECT's information system to verify all project costs. The computerized system also provides timely information for invoicing, and upon request, detailed supporting documentation for all project charges.

ECT takes pride in the cost effectiveness of its professional services while achieving high levels of technical quality. The cost effectiveness of the team's services reflects the sound business management and cost control practices of the firm. The results of these practices are passed on as cost savings to ECT's clients.

CORPORATE QUALITY PROGRAM

ECT is committed to providing its clients with high-quality environmental, scientific, and engineering services. To achieve this corporate goal, ECT has established and maintains an active Corporate Quality Program (CQP). ECT's established CQP defines the policies and procedures for controlling the quality of all facets of ECT's technical work including field data collection, field survey methods, data analyses, and project deliverables, as well as efforts performed by subcontractors and communications and confidentiality requirements.

Important elements in ECT's CQP include:

- Determination of work tasks and assumptions (i.e., definition of the program requirements as understood by the client and ECT).
- Use of published or state-of-the-art field and analytical equipment and techniques (and adherence to these techniques).
- Participation in cooperative government and industrial quality assurance (QA) programs.
- Use of recognized experts to review field and laboratory results and to examine final deliverables for completeness, objectivity, and technical quality.
- Periodic review by senior staff members of all procedures and internal research and program updating to ensure that ECT uses and contributes to improvements in the state-of-the-art.
- Clearly delineated lines of internal and external communication and managerial and technical responsibilities throughout program performance.
- Continued follow-up of all work efforts through successful project completion.

The corporate requirements of ECT's CQP are outlined in a number of Quality Assurance/Quality Control (QA/QC) documents including a Comprehensive QA Plan (CompQAP), project-specific QA project plans (QAPPs), standard operating procedures, and numerous manuals (e.g., the *ECT Document Production Manual*, equipment manuals, etc.). The CompQAP is approved by the state and complies with EPA guidelines. In addition to these documents, ECT routinely prepares work plans or plans of study that define project requirements.

CORPORATE SAFETY PROGRAM

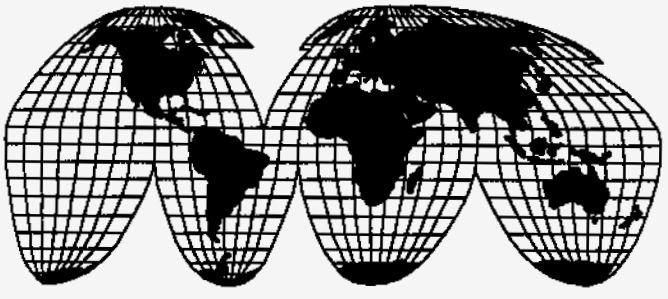
The health and safety of all employees, client personnel, and other individuals associated with project work efforts are a top priority for ECT. Therefore, ECT has an established corporate safety program. This program describes the policies and procedures which must by followed to assure the health and safety of employees and other parties, especially those involved in field sampling and handling of hazardous, toxic, and flammable materials. As appropriate, project-specific safety plans are prepared and tailored to the specific requirements of a project. These plans are provided to clients for review and approval and for training of personnel to ensure the safety of all persons involved in the project and in the project site area.

In addition to the safety plans, ECT routinely provides 40-hour safety training and *refresher* courses for its employees as well as non-ECT personnel. This training coupled with routine medical monitoring ensures that ECT personnel are highly trained for and protected against environmental hazards.

INTERNATIONAL REGISTRATIONS

ECT has the following international registrations with potential funding sources for projects worldwide.

- The World Bank—International Bank for Reconstruction and Development (IBRD)
- The World Bank—International Finance
- Corporation (IFC)
- The Kuwait Fund for Arab Economic
- Development (KFAED)
- Inter-American Development Bank (IDB)
- Asian Development Bank (ADB)
- U.S. Agency for International
- Development (USAID)



For more information on our qualifications, please contact any one of the offices listed below.

GAINESVILLE
3701 Northwest 98th Street
Gainesville, Florida 32606
352/332-0444
352/332-6722 (FAX)

TALLAHASSEE
1725 East Mahan Drive, Suite 104
Tallahassee, Florida 32308
850/671-7299
850/671-5493 (FAX)

TAMPA
5405 Cypress Center Drive, Suite 200
Tampa, Florida 33609
813/289-9338
813/289-9388 (FAX)

ORLANDO
7600 Southland Boulevard, Suite 100
Orlando, Florida 32809
407/816-0932
407/816-0934 (FAX)

FORT LAUDERDALE
6300 Northeast First Avenue, Suite 100
Fort Lauderdale, Florida 33334
954/771-0444
954/771-8118 (FAX)

BRIGHTON
10407 East Grand River Avenue, Suite 800
Brighton, Michigan 48116
810/494-5051
810/494-5059 (FAX)

FORT MYERS
4100 Center Pointe Drive, Suite 112
Fort Myers, Florida 33916
941/277-0003
941/277-1211 (FAX)

DETROIT
Book Tower, Suite 3500
1249 Washington Boulevard
Detroit, Michigan 48226
313/963-6600
313/963-1707 (FAX)

JACKSONVILLE
4110 Southpoint Boulevard, Suite 126
Jacksonville, Florida 32216
904/296-0544
904/296-2473 (FAX)

Table 1. Select ECT Team Power-Related Experience

Name	Specialization	Years of Experience	Relevant Project Highlights
Anthony N. Arcuri, M.A.	Terrestrial ecology; botany; wetland jurisdictional determinations, permitting, and mitigation	19	• Project ecologist/botanist for power plant licensing studies for TEC, USGC, TPS, BG&E, PEPCO, SECI, MSU, and ACE. • Project botanist for transmission line certifications for FPC and FPL. • Wetland delineations and/or mitigation plans for DPL, TEC, FPC, FPL, and CEC. • Wetland permitting for TEC and CEC.
Vilma S. Brueggemeyer, M.S.	Project management, siting, licensing, solid and hazardous waste management, agency liaison	21	• Environmental assessments under World Bank guidelines for two power plants in Guatemala for TPS and CGESJL. • Project manager for power plant siting, licensing and permitting for Big Bend Unit 4, W.C. MacInnes, Hardee Power Station, and Polk Power Station for TEC. • Transmission line siting for TEC. • TEC hazardous waste management programs. • Fine mesh screen study for TEC. • Waste water permitting for TEC. • Project manager for TPS 260-MW cogeneration facility in Yabucoa, Puerto Rico. • NPDES for all TEC facilities and USGC Indiantown facility. • Project manager Title V permits for TPS and TEC. • Mixing zone studies for TEC.
Larry J. Danek, Ph.D.	Project management, water resources, impact assessments, hydrodynamic and water quality modeling	23	• Environmental assessments under World Bank guidelines for two power plants in Guatemala for TPS and CGESJL. • Project management of multidisciplinary power projects for TEC, PEPCO, BEPCO, NPPD, WEPCO, and CECO. • 316(a) and (b) studies for NYSEG, NPPD, and CECO. • Licensing feasibility studies for OEI and TPS. • Surface water hydrology and water quality studies for DPL, WEPCO, CECO, NPPD, TPS, and USGC. • Special thermal studies for PEPCO, NPPD, WEPCO, and BG&E.

Table 1. Select ECT Team Power-Related Experience (Continued, Page 2 of 6)

Name	Specialization	Years of Experience	Relevant Project Highlights
Larry J. Danek, (Continued)			• Contamination assessment and contingency planning for DPL. • Bathymetric studies for BEPCO, NPPD, USGC, and WEPCO. • Sediment and erosion studies for WEPCO. • Hydrodynamic and thermal modeling for WEPCO, BG&E, NPPD, DPL, and CECO.
Thomas W. Davis, P.E.	Air resources, air quality monitoring and modeling, emission inventories, air pollution risk analysis	25	• Environmental assessments under World Bank guidelines for two power plants in Guatemala for TPS and CGESJL. • Project manager for air resources assessments for TEC and BG&E. • Air permits for TEC, Texaco, U.S. Air Force, City of Detroit, and various refineries in Arizona, Louisiana, Oklahoma, Texas, Kansas, Utah, North Dakota, Montana, Alabama, Wyoming, New Mexico, and Puerto Rico. • Licensing support for TEC, MEC, PEC, and TPS. • Air quality assessments for TEC, BG&E, NMPC, ODEC, and TPS. • Title V permitting for TEC, MEC, TPS, SECI, and GRU.
Jack D. Doolittle, B.A.	Project management, socioeconomics	24	• Project management for environmental assessments under World Bank guidelines for two power plants in Guatemala for TPS and CGESJL. • Project management of multidisciplinary studies in support of power plant and transmission line siting and licensing for SECI, ACE, TEC, FPC, FPL, BG&E, JCP&L, MSU, PEPCO, SIPC, NYSERDA, NCEMC, and SPCI.

Table 1. Select ECT Team Power-Related Experience (Continued, Page 3 of 6)

Name	Specialization	Years of Experience	Relevant Project Highlights
Jeffrey L. Meling, M.S., P.E.	Air resources, air modeling, project management	18	• Power plant siting studies (air quality) for SECI, TEC, JCP&L, NCEMC, and Cogentrix. • Air quality monitoring plans for JCP&L, ACE, and TEC. • Air quality modeling and permitting for TEC, DPL, JCP&L, ACE, RCU, MSU, MEC, PEC, SCE&G, SECI, and Cogentrix. • Project management for power plant licensing for MEC, PEC, and ACE.
Bradley S. Pekas, M.S., P.G., P.E.	Geology, hydrogeology, ground water modeling, geotechnical investigations	11	• Environmental assessments under World Bank guidelines for two power plants in Guatemala for TPS and CGESJL. • Geology/hydrogeology investigations for TEC's Polk Power Station. • Geology/hydrogeology investigations for TPS's Yabucoa, Puerto Rico, fatal flaw analysis. • Power plant siting studies (geology/ hydrogeology) for SECI, TPS, and TEC. • Water allocation (use) permits for BG&E, ACE, and TEC. • EIS preparation (geology/hydrogeology) for FPL's Martin County expansion.
James E. Poppleton, M.A.	Uplands ecology, wetlands ecology, endangered species, wetlands permitting and mitigation	21	• Environmental assessments under World Bank guidelines for two power plants in Guatemala for TPS and CGESJL. • Environmental feasibility studies for TEC. • Wetland assessments for USGS and Nature Conservancy. • Wetland and upland ecology studies in support of EISs for NASA and CMI. • Ecological baseline and wetland permitting and monitoring for USGC's Indiantown Cogeneration Plant. • Transmission line siting studies for SECI. • Wetland permitting for a 20-mile transmission corridor in Glades County for SECI. • Endangered species and wetlands evaluations for several FPC power plant expansion and transmission corridors.

Table 1. Select ECT Team Power-Related Experience (Continued, Page 4 of 6)

Name	Specialization	Years of Experience	Relevant Project Highlights
James E. Poppleton (Continued)			• Wetland permitting and forest conservation plans for PEC's Brandywine plant in Maryland.
Philip W. Simpson, M.S.	Project management, terrestrial ecology, siting and licensing, endangered species	20	• Project management and/or project ecologist for power plant and transmission line siting/licensing for Gulf, CEC, Columbia, Cogentrix, FPL, FPC, SECI, TEC, TPS, SPCI, Consumers Power, DPL, NCEMC, PEC, MEC, and USGC. • Environmental assessments under World Bank guidelines for two power plants in Guatemala for TPS and CGESJL. • Permit audits for proposed power plants for FPL, MEC, PEC, TPS, and USGC. • Endangered species mitigation for FPL, SECI, SCE&G, IMC, and OUC.
Richard J. Stebnisky, M.S., P.G.	Hydrogeology, ground water modeling and monitoring, water use permitting, waste water discharge permitting, project management, hazardous waste permitting and compliance, contamination assessments	13	• Hydrogeologic analyses and water use permitting for DEI and Sandpiper Bay Resort, and two PEC facilities. • Waste water discharge permitting and hydrogeologic evaluations for USGC and DEI. • Contamination assessment, hydrogeologic evaluations, and hazardous waste closure permitting at numerous RCRA and industrial waste facilities.
Stanley T. Stokes, P.E., MBA	Environmental engineering, water resource permitting, environmental siting and licensing, regulatory compliance, solid and hazardous waste management, SARA Title III	21	• Plant onsite environmental compliance engineer for JEA generating stations. • Project manager for JEA generating station mixing zone project. • Project environmental engineer for St. Johns River Power Plant coal-fired power plant licensing. • Project licensing engineer for various JEA transmission and substation projects. • Project manager for JEA's toxic release inventory compliance. • Operations coordinator for JEA spill management team, incident commend system.

Table 1. Select ECT Team Power-Related Experience (Continued, Page 5 of 6)

Name	Specialization	Years of Experience	Relevant Project Highlights
Darren L. Stowe, AICP	Land use planning, socioeconomics, environmental assessments	20	• Project planner for Duke's New Smyrna Beach project. • Project planner for Gulf Power's Smith Unit 3, including comprehensive plan land use amendment and expert testimony. • Project planner for Columbia'a Kelvin Ridge project. • Project planner for PEC's Midway project including preparation of comprehensive plan land use amendment and other local land use approvals. • Due diligence specializing in land use issues and environmental assessment concerns for PP&L for the potential acquisition of electrical generation through mandated directives.
Gary P. Uebelhoer, M.B.A.	Environmental assessments and impact statements, land reclamation, wetlands permitting and mitigation	22	• Preparation of land reclamation plan for TEC's 1,160-MW Polk Power Station. • Project manager for licensing of 260-MW DEI Tiger Bay cogeneration facility including water use, waste water treatment, and storm water discharge permits; SPCC plans; and archaeological, historical, and wetlands site assessment. • Project director for siting and licensing feasibility assessment for TPS 260-MW cogeneration facility in Yabucoa, Puerto Rico.

Table 1. Select ECT Team Power-Related Experience (Continued, Page 6 of 6)

Name	Specialization	Years of Experience	Relevant Project Highlights

Abbreviations:
ABB—ABB Energy Ventures, Inc.
ACE—Atlantic City Electric Company
BEPCO—Basin Electric Power Company
BG&E—Baltimore Gas & Electric Company
CEC—Clay Electric Cooperative
Cogentrix—Cogentrix Energy, Inc.
Columbia—Columbia Electric Corporation
CECO—Commonwealth Edison Company
CGESJL—Central Generadora Eléctrica de Guatemala Sociedad Anónima
CMI—Consolidated Minerals, Inc.
DEI—Destec Energy, Inc.
DPL—Delmarva Power & Light Company
Duke—Duke Energy North America, LLC
EEGSA—Empressa Eléctrica San José, Limitada
EGAT—Electricity Generating Authority of Thailand
FPC—Florida Power Corporation
FPL—Florida Power & Light Company
GRU—Gainesville Regional Utilities
IMC—IMC Fertilizer
JEA—Jacksonville Electric Authority
JCP&L—Jersey Central Power & Light Company
MEC—Mission Energy Company
MPPRP—Maryland Power Plant Research Program
MSU—Middle South Utilities
NASA—National Aeronautics & Space Administration
NCEMC—North Carolina Electric Membership Corporation
NMPC—Niagara Mohawk Power Corporation
NPPD—Nebraska Public Power District
NYSEG—New York State Electric & Gas Company
NYSERDA—New York State Energy & Research Development Authority
ODEC—Old Dominion Electric Cooperative
OEI—Outokumpu EcoEnergy, Inc.
OUC—Orlando Utilities Commission
PEC—Panda Energy Corporation
PEPCO—Potomac Electric Power Company
PP&L—PP&L Global, Inc.
RCES—Reedy Creek Energy Services
RCU—Reedy Creek Utilities
SCE&G—South Carolina Electric & Gas Company
SECI—Seminole Electric Cooperative, Inc.
SEPCO—Savannah Electric Power Company
SIPC—Southern Illinois Power Cooperative
SPCI—Soyland Power Cooperative, Inc.
TEC—Tampa Electric Company
TPS—TECO Power Services Corporation
USAF—U.S. Air Force
USGC—U.S. Generating Company
USGS—U.S. Geological Survey
WEPCO—Wisconsin Electric Power Company

Source: ECT, 2000.

Table 2. ECT Staff Selected Power-Related Experience

Power Company	Experience
ABB Energy Ventures, Inc.	• Bee Line Power Station—Licensing feasibility study for a power plant to be located in Palm Beach County, Florida.
Alpena Power Company	• Preliminary Site Assessment—Preliminary evaluation by dispersion modeling of the acceptability of a possible site of a peaking unit.
Applied Energy Services	• Warrior Run Cogeneration Facility—Developed emission estimates in support of a PSD application for a coal-fired power plant in western Maryland.
Atlantic Electric (now Conectiv)	• Title V Permitting—Complete Title V emissions inventories and permit applications for 11 coal-, oil-, and gas-fired power generation facilities, and related maintenance operations and facilities located in southern New Jersey. • B.L. England Station—Prepared air control equipment construction permit applications for flue gas desulfurization (FGD) systems that were mandated by the 1990 Clean Air Act Amendments. Also prepared water appropriations permit application. Developed test plan and supervised field hydrogeologic testing for 650 gpm ground water supply system. Prepared coal sulfur variance reapplication. • Sherman Avenue—Prepared CEMS monitoring plan. • Missouri Avenue—Combustion turbine (CT) relocation, regulatory applicability analysis, and permit application preparation. • Sherman Avenue Site—Multidisciplinary permitting for 75-MW CT facility. • Cumberland Site—Licensing for 220-MW combined cycle (CC) and 150-MW coal-fired units. • Cumberland Station—Permitting for 75-MW CT facility. • Millville Site—Multidisciplinary monitoring program to support licensing of 350-MW coal-fired power plant. • Millville Site—Water availability study to evaluate four potential sources of cooling water makeup.
Atlantic Thermal Systems, Inc. (now Conectiv Thermal Systems)	• Midtown Energy Facility—Multidisciplinary permitting services for boiler and chilled water facility in downtown Atlantic City, New Jersey. Services included air permitting, environmental site assessments (ESAs), coastal zone (CAFRA) permitting, and expert testimony. Also prepared detailed environmental permits compliance manual.
Auburndale Power Partners	• Auburndale—Environmental permitting for 150-MW CC, cogeneration project in Polk County, Florida, including PSD, storm water, and water use permitting. Prepared an air construction permit application for installation of a SCR control system. Completed Title V services for the cogeneration facility. Updated due diligence audit in support of financial closing of 150-MW unit. General air services were provided, including the revision of Title V permit application, annual emissions fee forms, and PSD permit modification.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 2 of 20)

Power Company	Experience
Bahamas Electricity Corporation	• Clifton Pier Power Station—Collected ambient air quality samples in indoor areas where previous bulk sampling and analysis had confirmed the presence of asbestos-containing materials.
Baltimore Gas and Electric Company	• Brandon Shores Power Plant—Conducted a comprehensive air quality assessment of impacts from the 1,240-MW coal-fired power plant using modeling to assess air quality impacts with respect to NAAQS and PSD increments. • Perryman Site—Ecological baseline studies, wetland surveys, and bald eagle assessment for 700-acre site. • Perryman Site—Siting and licensing of 800-MW CC power plant on the Bush River, Chesapeake Bay.
Basin Electric Power Cooperative	• Lake Oahe—Bathymetric surveys and water circulation for siting study.
Boston Edison Company	• Edgar Power Park—Provided dispersion modeling services in support of a PSD permit application and impact assessment with respect to applicable ambient air quality standards.
Calpine Corporation	• Solutia Cogen—Provide full range of permitting services in support of a nominal 500-MW cogeneration plant at Solutia Chemical's plant in Decatur, Alabama. Prepare PSD, NPDES, dredge-and-fill, and other applications. • Amoco Cogen—Provide full range of permitting services in support of a nominal 500-MW cogeneration plant at Amoco's plant in Morgan County, Alabama. Prepare PSD, NPDES, dredge-and-fill, and other applications. • Georgia Bid Support—Provided environmental support for due diligence investigation prior to facility purchase. • Mexico Bid Support—Provided environmental support for proposals to construct CC power plants at Rio Bravo and Hermosillo, Mexico. Scope included plans for implementing ISO 14001 environmental management systems. • Hidalgo County Merchant Plant—Multidisciplinary environmental licensing for a proposed 700-MW CC merchant power plant near Edinburg, TX.
Central Generadora Eléctrica San José, Limitada	• San José Power Plant—Prepare quarterly and annual environmental monitoring reports for CONAMA and OPIC. • Puerto Quetzal, Guatemala—Conducted an environmental impact study for a 120-MW coal-fired power plant and coal unloading facility in accordance with CONAMA and World Bank guidelines. • San José Power Plant—Environmental impact assessment (EIA) for 120-MW coal-fired power plant in Masagua, Guatemala.
Charter Oak Energy	• Site Evaluation—Evaluated a potential cogeneration site in downtown Baltimore.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 3 of 20)

Power Company	Experience
Clay Electric Cooperative, Inc. (CEC)	• Spring Garden Substation—Conducted a Phase I ESA, including an ecological assessment. • Mitigation Monitoring—Conducted an ecological monitoring of a mitigation plan. • Spill Prevention, Control, and Countermeasure (SPCC) Plan—Prepared an SPCC plan for use in all of Clay Electric's regulated facilities. • Distribution Line Extension—Wetlands permitting associated with the construction and operation of distribution line extension on State Road 40 in Volusia County, Florida. • Green Cove Springs (GCS) Loop to Fleming Island Substation—Environmental services in support of REA Borrower's environmental report for the 4.5-mile, 115-kV transmission line. • GCS 69-kV Transmission Line—Services in support of REA Borrower's environmental report for the 7-mile, 69-kV tie line. • GCS to Fleming Island Substation—Wetlands mitigation permitting for the 115-kV transmission line. • Ecological Services—Miscellaneous environmental/ecological services in association with transmission and distribution construction/ operation. • Keystone Heights Operations—Conducted regulatory compliance audit of utility operations. • GCS to Fleming Island Substation—Completed Management and Storage of Surface Waters (MSSW) permits for access roads associated with transmission line. • Fleming Island-Brickyard Transmission Line—Alternatives evaluation and permitting feasibility for three proposed routes. • Fleming Island-Brickyard Transmission Line—Provided environmental assessment in conformance with REA guidelines for proposed 4-mile-long, 115-kV transmission line. • Fleming Island-Brickyard Transmission Line—Wetlands permitting associated with the construction of transmission line.
CMS Energy	• Venezuela—Landfarming soil remediation for two power plants. • Venezuela Power Plants—Provided remediation estimate and technical document review for two power plants on Margaretta Island, Venezuela.
CMS Generation	• Chateaugay Generating Plant—Reviewed facility history and reports to determine if facility generated and/or managed hazardous waste. • Environmental Management System (EMS) Appraisal—Evaluated EMS against elements of ISO14001 to determine inconsistencies. • California—Conducted environmental, safety, and health compliance audit of a power generating facility in Chateaugay.
Coastal Power Company	• Panama Power Plant—Prepare EIA for diesel engine power plant in the Republic of Panama to fulfill in country and World Bank guidelines. • Site Evaluations—Provide support in evaluating potential power plant sites in Florida. • Tipitapa Power Plant—Prepare EIA for Phase II, a 40-MW diesel engine expansion of existing 50-MW plant.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 4 of 20)

Power Company	Experience
Coastal Power Company (Continued)	• Itabo Power Plant—Conduct thermal modeling in Dominican Republic to evaluate discharge pipe and diffuser configurations to meet World Bank guidelines. • Haina Generating Company—Environmental audit reviews of six power plants in Dominican Republic as part of privatization program. • CDE Dominican Republic—Due diligence services in the assessment of four power plants scheduled for privatization. • Tipitapa Power Plant—Addendum to EIA to expand from 50 to 90 MW and obtain MARENA approval. Conducted continuous noise monitoring to establish background levels for use in demonstrating compliance with World Bank guidelines. • Panama Power Plant Audit Reviews—Reviewed environmental audits for four thermal power plants in Panama as part of potential purchase of the plants in privatization program. • La Loceria Power Plant—Prepared modification of environmental impact statement (EIS) and conducted air dispersion modeling for 80-MW diesel power plant in Panama. • Texas Sites—Conducted preliminary environmental reconnaissance of four potential power plant sites in Texas. Provided recommendations on development options and permitting. • Nejapa, El Salvador—Conducted air dispersion modeling for 150-MW diesel plant.
Coastal Power Nicaragua, Ltd.	• Tipitapa Power Plant—Prepared EIA for 50-MW diesel engine power plant which met Nicaraguan and World Bank environmental guidelines.
Cogentrix Energy, Inc.	• Florida Siting Study—Environmental siting study for a CC power plant in peninsular Florida.
Columbia Electric Corporation	• Charles County Merchant Plant—Multidisciplinary environmental licensing of a proposed 550-MW plant through Maryland's CPCN licensing process. • Atlas Cogen Project—Evaluation of licensing/permitting requirements for proposed 250-MW CC cogeneration plant in New Castle, Delaware.
Commonwealth Edison Company	• Quad Cities Station—Thermal plume and dye studies in support of 316(a) and 316(b) compliance. • Dresden Station—Fluorometric dye (time-of-travel) studies, thermal studies, and bathymetric surveys.
Conectiv	• Title V Conversions—Convert the Title V applications for nine New Jersey power plants to Radius (electronic) format and incorporate updates and revisions at the same time. • Title V Support—Review of draft permits and preparation of comments to state agency for New Jersey-based power generation facilities. • Emission Inventories—Prepare 1998 inventories for nine power plants in New Jersey using NJDEP's Radius electronic filing system.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 5 of 20)

Power Company	Experience
Conectiv (Continued)	• Database System Modifications—Modified existing environmental database system and provided additional enhancements to enable additional sharing of information with other existing internal database systems. • Environmental Compliance Manuals—Prepared compliance manuals for numerous facilities in Delaware and Maryland, including a summary of requirements, in an electronic database format. Compiled all environmental permits, conducted site visits, and prepared an applicability analysis for each facility. • Casino Operations—Prepared environmental compliance plant for Thermal Systems, Inc.-contracted operations for six casinos/hotels. • New Jersey Emissions Inventories—Prepared 1997 inventories for 10 power plants using NJDEP's new RADIUS electronic filing system. • Vineland Cogeneration Plant—Updated existing environmental compliance plan.
Constellation Power, Inc.	• Chinganola EIA—Prepare EIA for diesel 54 to 74 MW power plant in Panama City, Panama, in accordance with Panamanian requirements and World Bank guidelines. • San Martin EIA—Prepare EIA for diesel 54 to 74 MW power plant in Panama City, Panama, in accordance with Panamanian requirements and World Bank guidelines. • La Chorrera Power Plant—Evaluation of environmental impacts associated with addition of up to 48 MW. • El Salvador—Due diligence for three power plants and evaluation of environmental compliance costs in support of bid for purchase of the plants. • Seguin Industrial Park—Phase I site assessment in Guadalupe, Texas. • Illinois Permit Plan—Prepared comprehensive environmental permitting plan for proposed 700-MW CT/CC power plant(s) at various locations in central Illinois. • Gateway Power Project—Multidisciplinary permitting services in support of an 800-MW CC merchant power plant in northeast Texas. • Panama Noreste—ESAs, including subsurface investigations for 14 diesel power plants and 18 substation sites in the Republic of Panama as part of privatization program. • Nueva Esparta—Due diligence for purchase of an existing electric system in Venezuela consisting of 2 power plants, 22 substations, and transportation/distribution lines. • GPU Phase I—Due diligence review of air resources issues at six power stations in New Jersey and Pennsylvania. • Homer City—Environmental due diligence support of evaluation of and bid for the Homer City 2,000-MW coal-fired power plant in southwest Pennsylvania. • Guatemala—Conducted Phase I and II audits for two power plants. • Rock River—Prepared comprehensive environmental permitting plan for proposed 450-MW CT power plant in Beloit, Wisconsin. • Escuintla, Guatemala—Environmental permitting for 60-MW diesel fuel-fired power plant in accordance with CONAMA and World Bank guidelines.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 6 of 20)

Power Company	Experience
Consumers Energy Company	• Manufactured Gas Plant (MGP) Site in Charlotte, Michigan—Performed site investigation at former MGP site, including soil gas survey, water well survey, and surface soil sampling. • MGP Sites—Provided corrective action plan for 23 MGP sites in Michigan and conducted further site evaluations. • Alpena MGP—Assessed potential impact of MGP residuals on ground water-surface water interface. • Title V—Provided air permitting support in preparing Title V permit applications at various generating stations.
Cove Point LNG Ltd. Partnership	• Cove Point—Prepared environmental permitting plan for restart of LNG terminaling.
Cummins & Barnard, Inc.	• Pt. Comfort—Permitting and consulting services in support of a proposed CC cogeneration project at the Alcoa Pt. Comfort, Texas, plant.
Delmarva Power & Light Company (DPL) (now Conectiv)	• Vienna Station—Air quality modeling studies for Vienna Unit 8. • Delaware Clean Energy Project—Preparation of coastal zone permit application. • Hay Road Station— Environmental licensing for 450-MW CC facility. Conducted contamination assessment and prepared a hazardous waste contingency plan for DPL's new expansion site. • Salem Station—Four-year ecological study of potential impacts of 500-kV transmission line. • Easton-Steele Transmission Line—Siting and licensing for 24-mile, 138-kV transmission line corridor under Maryland's CPCN regulatory procedure. Coordinated and prepared the CPCN application. Provided expert testimony during the PSC hearings. Conducted all agency interaction, jurisdictional wetlands delineations and preparation activities to obtain joint federal/state permit within 4 months of application submittal. • Environmental Licensing Manual—Prepared manual covering all environmental permitting and licensing regulations and procedures for power plants, transmission lines, substations, and natural gas pump stations and pipelines in Delaware, Maryland, and Virginia. • Dorchester 1 CPCN—Conducted multidisciplinary baseline and impact assessment studies. Prepared the corresponding sections of the CPCN application and provided expert testimony during the Phase II PSC hearings. • Dorchester Siting Studies—Evaluated and rated 4 alternative project sites and 12 corridors for the Dorchester Power Plant linear facilities.
Destec Energy, Inc.	• Tiger Bay Cogeneration Project—Environmental permitting for a 206-MW CC cogeneration project in Polk County, Florida, including spill prevention, control, and countermeasure plan; historical resources survey; threatened and endangered species survey; water use; industrial waste water; and state and NPDES storm water permitting.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 7 of 20)

Power Company	Experience
Duke Energy North America	• Confidential Site—Licensing/permitting fatal flaw assessment for a potential 500- to 1,000-MW merchant power plant. • New Smyrna Beach CC Project—Full-service, multidisciplinary environmental licensing for a 500-MW CC plant through Florida's comprehensive site certification process.
Edison Mission Energy	• Kentucky Permitting—Prepared report summarizing permitting/licensing requirements that might apply to a proposed CC facility. • Georgia-Alabama Site Evaluation—Environmental support involving site selection, evaluation, and fatal flaw studies for a proposed 1,500-MW natural gas-fired CC power plant. • Puerto Rico—Conducted due diligence of LNG power plant being considered for purchase. • International Standards Review—Created tabular summaries of guidelines/standards for thermal and diesel power generation facilities. Provided review comments on Feb. 1998 OPIC *Draft Environmental Handbook*. • Alabama and Georgia—Prepared summaries of state permitting requirements for power plants, including permit matrix. • Kui Buri—Conducted noise modeling evaluation of a power plant in Thailand. • Maryland Cogeneration Sites—Environmental analysis and evaluation of four potential cogeneration sites in Maryland. Criteria included site contamination potential, water supply, wastewater discharge, ecology, air quality/stack height, and community acceptance/zoning. • Proposed Power Plant—Environmental support for Mission's proposed IPP project to Duke Power in Harris County, Georgia. • State Line Station—Environmental due diligence and identification and assessment of potentially significant environmental issues relative to potential acquisition of power plant. • Brooklyn Navy Yard—Multidisciplinary permitting studies and EIS preparation for 286-MW cogeneration facility in Brooklyn, New York. • Site Evaluation Study—ECT provided technical services and evaluations of potential coal-fired and CC power plant sites in Alabama, Tennessee, and Kentucky. • South Carolina Cogeneration Project—Prepared an assessment of PSD applicability and developed a list of all required permits for a proposed 200-MW, simple-cycle gas turbine project for several alternate sites in South Carolina. • Medley Cogeneration Project—Air quality fatal flaw study and preliminary wetlands/ecology evaluation of proposed cogeneration site.
Elektra Noreste, S.A.	• Villalobos Cleanup—PCB sampling and remediation feasibility and cleanup.
Empresa Electrica de Guatemala, S.A.	• La Laguna—Due diligence Phase I ESA for oil-fired power plant and CT in conjunction with sale of these two stations.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 8 of 20)

Power Company	Experience
Empresa Generadora de Electricidad Itabo, S.A.	• Itabo Phase II ESA—Conduct Phase II ESA for five electric generating power plants in the Dominican Republic.
Enron Engineering & Construction Company	• Puerto Quetzal—Prepare EIA for 120-MW barge-mounted diesel engine power plant in Guatemala. EIA required to meet CONAMA and World Bank guidelines. • Corinto Power Plant—EIA and other permits for 70-MW barge-mounted diesel engine power plant docked at Pto. Corinto, Nicaragua, and a 56-km transmission line.
Enron Capital & Trade Resources Corporation	• Doyle Project—Environmental permitting for 350-MW simple cycle power plant located in Walton County, Georgia. Prepared permits for the installation of three additional 70 MW simple-cycle CTs.
Florida Power & Light Company (FPL)	• Fort Myers Repowering Project—Conducting the thermal discharge modeling and 316a demonstration to support licensing of project. • CO_2 Sequestration Study—Performed mechanical and vegetation sequestration analyses of CO_2 throughout FPL's service territory. • Port Everglades Facility—Engineering and consultant oversight for deep well rehabilitation. • Orange River-Barcola Transmission Line—Siting and licensing for 100-mile, 500-kV transmission line corridor under Florida's TLSA regulatory requirements. • Martin Coal Gasification/Combined Cycle Project (CG/CC)—EIS for 1,600-MW project in Martin County, Florida. • Duval-Georgia Transmission Corridor—Siting and permitting for 30-mile, 500-kV line in northeast Florida. • Crane-Bridge-Plumosus Line—Siting and licensing for 40-mile, 230-kV transmission line using TLSA. • Levee-Midway Transmission Line—Siting and licensing for 150-mile, 500-kV transmission line corridor using TLSA. • Sanford Station—Environmental licensing for coal/water mix fuel conversion project. • Duval Poinsett Transmission Line—Siting and licensing for 175-mile, 500-kV transmission line corridor following Florida's TLSA regulatory procedures.
Florida Power Corporation (FPC)	• Wetland Permitting and Mitigation—Wetland jurisdictional surveys, dredge-and-fill permitting, and mitigation planning for various facilities and transmission lines through FPC service territory. • Turner Power Plant Sprayfield—Evaluation and design of waste water sprayfield including ground water quality impacts and the use of MODFLOW. • Crystal River Units 4 and 5—Multidisciplinary monitoring, assessments, and EIS preparation for 1,200-MW coal-fired units. • Hazardous Materials—Management program and inventory system. • Lake Tarpon-Kathleen Transmission Corridor—Siting and licensing for 40-mile, 500-kV line under TLSA requirements. • Central Florida-Kathleen Transmission Corridor—Expert testimony in terrestrial ecology for 500-MW line under TLSA requirements.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 9 of 20)

Power Company	Experience
FPC (Continued)	• Mid-80s Coal Project—Environmental studies of 250 miles of proposed 500- and 230-kV transmission corridors associated with proposed generating plants.
Ford Motor Company	• Rouge Powerhouse—Evaluation of NO_x control options for the eight coal-, oil-, and gas-fired boilers serving the Rouge manufacturing facilities. • Rouge Powerhouse—Performed Title V emission inventory and completed operating permit application and draft operating permit.
Foster-Wheeler Environmental Corporation	• FERC Licensing—Assistance with FERC licensing, data collection, wetlands delineation, and all Florida permitting for 650-mile-long natural gas pipeline proposed from Mobile Bay, Alabama, to South Florida.
Gainesville Regional Utilities	• Kelly Plant—Baseline noise monitoring for a 128-MW oil- and gas-fired power plant. Prepare state air source construction permit for a CT generator. • Title V Permitting—Complete Title V emissions inventory and permit application preparation for a 300-MW coal-, oil-, and gas-fired power plant. • Air Quality Impacts—Assessed SO_2 from 128-MW oil- and gas-fired power plant.
GC Services Company, Inc. (TEC Affiliate)	• Investigation—Conducted preliminary contamination assessment and prepared report regarding equipment wash pad/waste water tank. • Air Review—Prepared emission inventory and air construction permits.
Granite Power Partners II, L.P.	• Vandolah CTs—Permitting services for a nominal 500-MW natural gas- and oil-fired simple cycle CT power plant in central Florida.
Grupo Generator de Guatemala y cia S.C.A.	• La Laguna—Asbestos services and OSHA/NIOSH monitoring at power plant in Guatemala.
Guatemala Generating Group	• Escuintla—EIA and support for 5-MW test unit using Orimulsion® in Guatemala. • La Laguna Power Plant—EIA for 90-MW combined cycle unit in Guatemala.
Gulf Power	• Smith Plant Site—Multidisciplinary licensing/permitting services for a new 500-MW combined cycle power plant in Bay County, Florida. Licensing required under Florida's Power Plant Siting Act.
Hardee Power Partners Limited	• Hardee Power Station—Prepare update of integrated contingency plan and best management practices and pollution prevention plan.
Hydro-Quebec International	• Panama Hydro Plants—Reviewed environmental audit reports for four hydroelectric power plants in Panama and developed cost estimates for environmental liabilities to be addressed in purchase of the plants.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 10 of 20)

Power Company	Experience
Illinova Generating Company	• Plantas Eolicas—Environmental due diligence for a wind-generating plant near Lake Arenal, Costa Rica. • Cali, Colombia—Reviewed regulatory framework for a proposed fossil fuel-fired power plant, translated documents, and prepared summary report.
Intercontinental Energy Corporation	• Sayreville, NJ—Environmental study review and expert witness testimony for 300-MW CC unit.
Jacksonville Electric Authority	• Dye Study—Dye study and dispersion modeling on the St. Johns River to determine effluent plume characteristics of the Buckman WWTP.
Jersey Central Power & Light Company	• Gilbert and Forked River Stations—Licensing planning and air monitoring for CC and coal-fired facilities. • Southern Service Territory—Site selection study for 300-MW CC generating facility and associated transmission lines. • Forked River Site—Siting and licensing studies and EIS for 99-MW CT facility.
KES Chateaugay, L.P.	• Chateaugay Power Station—Phase I ESA in Chateaugay, New York.
Lakeland Electric & Water	• Griffin Road—Provided description for a wetland potentially impacted by construction of a water main extension.
Lamar Power Partners, L.P.	• Wastewater Feasibility Study and TPDES Permitting—Study of disposal alternatives for cooling tower blowdown and other wastewater streams from a 1,000-MW merchant power plant in Paris, Texas. Permitting of discharge to surface water (TPDES) and related USACE permits.
Louisiana Power & Light Company	• Waterford Station—Hazardous audit and management program development.
MAN B&W Diesel AG	• Corinto Power Barge—Conducted thermal mixing zone modeling for testing of barge in Nicaragua. • Puerto Quetzal—Thermal plume modeling for discharge from 124-MW diesel power plant barge in Guatemala.
Middle South Utilities	• Grand Bahama Project—Field data collection and impact assessments for 400-MW coal-fired power plant on Grand Bahama Island and submarine cable to Florida.
Montenay Power Corporation	• Dade County—Prepare risk management plan for waste-to-energy facility.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 11 of 20)

Power Company	Experience
Nebraska Public Power District	• Cooper Nuclear Station—Monthly dye and thermal plume surveys. • Gerald Gentleman Station—Monthly thermal plume and dye studies, bathymetric surveys, and recirculation studies. • Sutherland Reservoir—Two-year temperature and water current monitoring program. • Lake Maloney—Continuous water temperature monitoring in support of NPDES permit.
New York State Electric & Gas Company	• Thermal Plume Monitoring and Modeling—Four sites for 316(a) compliance.
Niagara Mohawk Power Corporation	• Huntly Station—Provided dispersion modeling and impact assessment services in support of a state permit application for a power plant FGD project.
Nordic Power	• Environmental Impact Report and Permit Applications—280-acre cogeneration site in Massachusetts.
North Carolina Electric Membership Cooperative	• North Carolina Siting Study—Siting of potential 400-MW/800-MW CC/IGCC facilities in central North Carolina under REA and State of North Carolina guidelines.
Oglethorpe Power Corporation	• Siting Studies and Environmental Assessments—REA permit applications of 19 transmission line and substation projects throughout Georgia.
Old Dominion Electric Cooperative	• Clover Project—Provided dispersion modeling services in support of a PSD permit application for a coal-fired power plant in Virginia.
Outokumpu EcoEnergy, Inc.	• Feasibility Study—Licensing feasibility study for the construction and operation of a peat mine and collocated power plant at Highlands and Palm Beach County sites in Florida. • Site Selection Study—Conducted site selection study for power plant sites in west central Florida.
Pacific Gas & Electric Company	• Geysers Area—Impact assessment for diversion of Big Sulpher Creek.
Panda Energy International, Inc.	• GilaBend—Permitting support and oversight for a proposed 2,000-MW CC power plant near Phoenix, Arizona. • West Virginia Feasibility—Provide planning and related services related to a potential 1,000-MW merchant power plant. • Midway—Full-service, multidisciplinary environmental activities in support of licensing a 1,000-MW merchant power plant near Fort Pierce and Port St. Lucie through Florida's site certification process. • Leesburg—Full-service, multidisciplinary environmental activities in support of licensing a 1,000-MW merchant power plant near Leesburg through Florida's site certification process. • ERCOT IV—Full-service environmental licensing/permitting for a 1,000-MW merchant power plant near Odessa, Texas.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 12 of 20)

Power Company	Experience
Panda Energy International, Inc. (Continued)	• Union Generating Station—Full-service environmental licensing/permitting for a proposed 2,700-MW natural gas-fired, CC merchant plant near El Dorado, Arkansas, including PSD, water supply, NPDES, dredge-and-fill, and storm water. • Trans-Union Interstate Pipeline—Prepared environmental surveys and assessment of 40-mile natural gas pipeline in Louisiana and Arkansas. Assisted in preparation of FERC application. • Pennsylvania Merchant Plant—Full-service environmental licensing/permitting for a proposed 1,000-MW natural gas-fired, CC merchant power plant in Montgomery County, Pennsylvania. • ERCOT III—Full-service environmental licensing/permitting for a proposed 1,000-MW merchant power plant near Wichita Falls, Texas. • Oneta Merchant Project—Full-service environmental licensing/ permitting for a proposed 1,000-MW merchant power plant near Tulsa, Oklahoma. • Confidential Site—Site evaluation and licensing/permitting for a 1,000-MW CC power plant. Site evaluation phase included Phase I ESA and fatal flaw analysis. • Guadalupe County, Texas—Full-service environmental licensing/ permitting for a 1,000-MW power plant. • Paris, Texas—Full-service environmental licensing/permitting for a 1,000-MW merchant power plant. • Magic Valley—Licensing services for a proposed 500-MW merchant power plant near Harlingen, Texas. • Pan-Oak Pipeline—Wetlands dredge and fill permitting for a 6-inch natural gas line, approximately 2 miles in length, located north of Mobile, Alabama. Scope included site reconnaissance, wetlands delineation, application preparation, and agency interaction. • Brandywine Cogeneration Facility—Prepared bid package for purchasing and installing trees to satisfy agency mitigation requirements. • Texas Permit Audit—Performed environmental permit audit for 310-MW CC plant to be located in Hidalgo County. • Boyd County Audit—Performed an environmental permit audit for a CC power plant in Kentucky. • Power Plant in China—Translated documents from Chinese to English in support of 100-MW coal-fired power plant in Luannan County, China. • Site Assessment in Colombia—Site assessment, fatal flaw analysis, and permitting audit for potential power plant site development near Calí, Colombia, to provide power to Corporación Autónoma Regional del Cauca. ECT also provided in-country agency and local environmental consultant coordination. • Kathleen Cogeneration Project—Environmental permitting for a 120-MW CC cogeneration facility near Lakeland, Florida, including PSD, water use, storm water/waste water, linear facilities, and land use/zoning. • Brandywine Cogeneration Project—Licensing of a 250-MW cogeneration facility and associated corridors under the Maryland CPCN process, including PSD permitting, water appropriation and pump testing, NPDES/SDP, wetlands, land use/ zoning, and expert testimony.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 13 of 20)

Power Company	Experience
Panda Energy International, Inc. (Continued)	• Rosemary Cogeneration Facility—Title V emissions inventory, permit application preparation, and negotiations of revised permit limitations for a two-unit, 150-MW gas- and oil-fired cogeneration facility in North Carolina.
Perkins Power Company	• Repowering Studies—Plant inspection, complex terrain dispersion modeling, and permitting for the proposed repowering of a 100-MW coal-fired plant near Sheridan, Wyoming. Also, investigatory meetings with Wyoming DEQ (Cheyenne) and EPA Region VIII (Denver).
Potomac Electric Power Company (PEPCO)	• Benning Station—Site selection study for 200-MW CT generating facility. • Dickerson Site—Multidisciplinary monitoring to support licensing of coal-fired power plant. • Station H—Monitoring, impact assessment, permit applications, and expert testimony for Phase I CT project to support licensing. • Station H—Site selection study monitoring, impact assessments to support 750-MW CG/CC generating facility. • Station H—Environmental report Federal Energy Regulatory Commission Fuel Use Act exemption. • Chalk Point—Study of fish attraction/repulsion to thermal plumes on the Patuxent River.
POWER Engineers, Inc.	• Lee County Electric Cooperative—Provided permitting for upgrade of Pine Island to Sanibel transmission line.
PP&L Global, Inc.	• Landfill Gas—Environmental due diligence for acquisition of landfill gas operation. • Connecticut Light & Power—Due diligence services including file review and site inspections for fossil and hydro facilities. • Tosco Refinery—Preliminary review of multidisciplinary environmental permitting requirements in support of a nominal 500-MW CC merchant power plant in New Jersey. • Montana Power Due Diligence—Provided environmental support, including document review and plant inspections, for bids on Montana Power facilities, including two coal-fired plants and nine hydroelectric plants. • Bangor Hydro Due Diligence—Provided environmental due diligence services, including file review and site inspections, for 10 hydroelectric stations and 3 diesel engine stations in Maine. • Central Maine Power—Environmental due diligence associated with sale of 800-MW Wyman Station and multiple hydro-electric generation stations. • Boston Edison—Due diligence associated with proposed sale of Fossil Generation Business Unit, including Mystic, New Boston, and four other stations.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 14 of 20)

Power Company	Experience
PP&L Global (Continued)	• Dighton Due Diligence—Environmental due diligence related to the proposed buy-in on a merchant power project being developed in Massachusetts. ECT conducted a thorough audit of environmental permits/approvals, both received and pending, and provided a professional opinion on the overall likelihood of successful permit issuance, as well as likely schedule for final approval.
Reedy Creek Energy Services	• Title V Permitting—Air permitting for a major destination resort, including all supporting maintenance and electric power generating facilities. • Process Safety Management—Develop program for chlorine facilities in accordance with 29 CFR 1910.119.
Resource Management International	• Candidate Sites Evaluation—Environmental evaluation of candidate sites in central Florida for CC and coal-fired power plants.
Saba Power Company Ltd.	• Ambient Monitoring, Pakistan—Set up operations for an ambient air monitoring station near Lahore.
Seminole Electric Cooperative, Inc. (SECI)	• Payne Creek Generating Station—Prepared modifications for site certification application, PSD permit, and RUS modifications to EIS to construct 488-MW CC power plant. • CT Siting Study—Provided GIS/CADD mapping services in support of siting efforts for a 500-MW CT power plant in Florida. • Seminole Plant—Provided general air quality services on an as-needed basis. Assistance with NPDES sufficiency responses. Perform assessment of potential chemical discharges on aquatic life in St. Johns River. Conduct a helicopter survey to delimit extent of wetlands north of landfill. Evaluation, preparation, and submittal of the 1998 toxic release inventory Form R for Units 1 and 2. Conducting water quality assessment in support of the NPDES permit renewal. Prepared an integrated contingency plan for facility. Title V emissions inventory and permitting for the 1,200-MW coal-fired plant, including power block, coal yard, limestone handling, FGD sludge processing, and railcar maintenance facilities. Evaluated potential environmental impacts resulting from use of pet coke. Conducted water quality assessment for proposed FGD blowdown, revised NPDES permit, and evaluated mixing zone incurred by plant outfall. Assessed the FGD system to determine the regulatory feasibility of bypassing the system with a certain portion of flue gas. Emergency response to overflow of used oil tank and excavation of impacted soil. Conducted regulatory compliance and management audit of two coal-fired power plants, substations, and headquarters. Conducted contamination assessment and prepared an assessment report and remedial action plan. Conducted initial assessment activities for a hydraulic fluid leak. Implemented monitoring only plan for ground water remediation for former underground storage tank site. • Task Order Contract—Provided environmental services on an as-needed basis. • C.M. Webb—Conducted data analysis to evaluate wetland mitigation success.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 15 of 20)

Power Company	Experience
SECI (Continued)	• Hardee-Vandola Transmission Corridor—Conducted detailed evaluation and mapping of endangered plants and animals along a 78-mile, 230-kV corridor. Secured approvals from USFWS, FGFWFC, and county governments. • Glades County Corridor—Acquired wetland permits for construction of a 69-kV transmission line around the west shore of Lake Okeechobee. • Seminole Plant-Keystone-JEA Firestone Transmission Line—Siting and licensing for 70-mile, 230 kV transmission line under TLSA. • CC Plant Site Selection Study—Extensive site selection study covering 70 percent of Florida for 440-MW CC power plant. • Late-80s Coal Project—Multidisciplinary environmental monitoring and assessments for 1,200-MW coal-fired power plant in Taylor County. • Hardee County Site—Site selection study for 440-MW CG/CC facility.
SONAT Power, Inc.	• Savannah Power Plant—Alternative site evaluations for 1,000-MW power plant. • Lee County, Alabama—Site assessment and permitting feasibility for 160-acre site.
South Carolina Electric & Gas	• Emissions Inventories—Title V emissions inventories for all SCE&G's power plants (coal-fired, oil-fired, CTs), pipeline compressor stations, and maintenance facilities. • V.C. Summer Nuclear Power Station—Title V emission inventory for combustion and other sources.
Soyland Electric Power Cooperative, Inc.	• Siting and EA for Power Plant and Transmission Corridor—Siting and EA preparation for coal-fired power plant and 120 miles of 138- and 345-kV transmission lines under REA requirements.
Tampa Centro Americana de Electricidad, Limitada	• Alborada Power Plant—Prepare quarterly and annual environmental monitoring reports for CONAMA and OPIC. Performed environmental impact study and permitting for a 78-MW CT facility in Escuintla, Guatemala.
Tampa Electric Company (TEC)	• Peoples Gas-Jacksonville—Performed an asbestos facility survey and prepared a report of findings. Air monitoring and project supervision during asbestos abatement activities. • Peoples Gas—Soil borings to assess extent of impacts for City of Tampa trolley car. • J.H. Phillips Station—AST assessment for two tanks. • Peoples Gas-Jacksonville MGP—Contamination assessment and initial remedial action for coal tar-contaminated soils at a former MGP site in Jacksonville, Florida. • UST Closure—Diesel tank monitoring and reporting at Tampa Catholic High School. • Risk Management Planning—Develop plans per CAA 112(r) for TEC's electric power generation facilities. • Davant, Louisiana—Prepared database for a toxic release inventory for a coal transportation company, GC Services.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 16 of 20)

Power Company	Experience
TEC (Continued)	• Road repair—Supervised vegetation repair of a transmission line access road and installed and monitored plants over a 1-year period. • Training—Developed and presented numerous 24-hour and 8-hour HAZMAT and HAZWOPER training sessions for TEC personnel. Also provided environmental compliance auditing training course. • Title V Permitting—Complete Title V emissions inventories and permit application preparation for all six TEC power generation facilities. • Site Selection Assessment—Siting study for 6-county area for 440-MW CC facility and 500-MW baseload power plant, including participation of public Siting Task Force. • Polk Power Station—Environmental monitoring and licensing for 1,150-MW generating station including U.S. Department of Energy-sponsored CG/CC project under the FEPPSA and SCA procedures. Conducted macroinvertebrate sampling in the receiving waters for NPDES discharge locations. Review sulfuric acid and ammonium chloride process; prepare MSDS for each material and hazard determination document. Conduct annual statistical monitoring of reclamation wetlands and prepare report. Updated facility response plan. Prepared permitting for two CTs. Conducted research and onsite surveys to establish mean high water boundary on Port Manatee site to support PPS mitigation. Prepared acid rain monitoring plan. Prepared Title V permit application. Sampled clean coal/syngas by-products and developed MSDSs. Updated Part 75 monitoring plan. Developed procedures for hazardous waste manual. Prepared MSDS for slag from coal gasification. Submitted permit modification to use petroleum coke as a fuel. Prepared NPDES permit application. • Gannon Station—Prepare NPDES permit application. Prepare O&M performance report and capacity analysis for WWTP and assist with permit renewal application. Review and evaluate domestic WWTP operational data and procedures, and prepare response to compliance letter. Completed air source construction permit application for a stack height increase and alternative solid fuel. Prepared technical documentation in support of conversion of slag sluice system from salt water to fresh water. Evaluated sewage treatment plant data. Collected samples of alternative fuel combustion by-products and developed MSDSs for products. Evaluated and permitted fuel yard modification. Obtained construction permit to burn coal/tire-derived fuel blend in boilers. Completed air permitting for alternate fuel-fired boiler (paper pellets) at Unit 4. Conducted aboveground storage tank closure assessment and report. Completed air permits for coal processing plant modification.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 17 of 20)

Power Company	Experience
TEC (Continued)	• Big Bend Station—Prepare air construction permit application for addition of inlet fogging to a simple cycle CT. Collect gypsum by-product sample for laboratory analysis and preparation of MSDS. Source removal monitoring following diesel discharge at the pumphouse. Closure assessment for our-of-service 5-million-gallon AST. Conducted UST closure at Warehouse 71; monitored and collected soil samples at dispenser. Completed environmental permits for FGD system for Units 1 and 2 scrubber. Modeling, design, and permitting activities to improve circulation characteristics of ash settling pond, modification/ expansion efforts of coal yard, increase use of the FGD system, and to obtain approval to test burn petroleum coke. Prepared a mangrove trimming permit application. Completed air permits for material handling equipment. Provided technical support for revision of ground water monitoring plan. Conducted inspections of existing spoil areas for the presence of colonial nesting birds. Conducted remedial action modification plan for free-product recovery system for an AST. • River-Durant Transmission Corridor—Siting suitability evaluation of 20-mile, 330-foot right-of-way for multiple transmission lines. • Storm Water Permitting—Conducted storm water sampling and prepared permit application for group storm water permit under EPA's NPDES regulations at Big Bend, Gannon, and Hookers Point stations. • Permitting Services—Dredge-and-fill and storm water permitting for over 30 miles of 230-kV transmission line and three substations. • Hookers Point—Prepared a best management practices and pollution prevention plan and NPDES permit application. • MSDS—Analyzed fly ash and furnace slag and developed MSDS. • Interstate 4 MacIntosh Road—Wetlands permitting associated with the relocation of a 69-kV transmission line. • Tampa Bay National Estuary Program—Reviewed and provided comments on the management plan. • Plan Preparation—Prepared best management plans, pollution prevention plans, and storm water pollution prevention plans for six TEC facilities. • Expert Witness Support—Provided litigation support relative to citrus burn episodes in Hillsborough County, Florida. • Port Manatee—Conducted ecological/hydrological investigation for a mitigation banking permit. • Paglen to Keystone Line—Provided wetlands jurisdictional determinations, threatened/endangered species evaluations, and wetland permitting for a 69-kV transmission line project. • I-4/McIntosh Road—Mitigation monitoring associated with the wetland permitting approvals for a 1-mile-long transmission line relocation project. • Operations Center—Conducted semiannual monitoring of ground water contamination resulting from a waste oil tank. • General Services—Environmental/ecological services associated with transmission/distribution lines and pipeline construction and operation. • TECO Parking Plaza—Completed limited contamination assessment report and prepared pre-approved advanced cleanup application. Evaluate remedial alternatives for cleanup of petroleum contamination.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 18 of 20)

Power Company	Experience
TEC (Continued)	• Port Manatee—Conducted quarterly ground water monitoring for arsenic. • Grimmer Borrow Pit—Supervised and reported on the installation of wetland plants at a mitigation site. • Sheldon Road—Prepared mitigation design for wetland impacts associated with tree trimming/removal in forested wetlands. • GTE Collier—Conducted wetland jurisdictional determinations and prepared permit applications for 13.2-kV distribution line.
TECO Power Services (TPS) Corporation	• Health and Safety—Provide compliance services for Hardee Power Station in Florida, and San José Power Plant and Alborado Power Plant in Guatemala. • Hamakua Power Plant—Provide permitting on an as-needed basis for new power plant in Hawaii. • Delmarva Power Plant—Environmental permitting support for 875 MW simple cycle power plant near New Church, Virginia. • Guatemala—Prepare initial environmental audit and environmental management and monitoring plan for 47 sites currently operated by EEGSA. • Belize—Due diligence assessment of Belize Electricity Limited facilities in support of bid for privatization program. • IMC Syngas Power Project—Identify permitting requirements, strategies, and schedule for proposed 540-MW CC power plant fired on syngas, and other facilities including gasification, sulfur, and ammonia plants. • San José Power Plant—Provide environmental health and safety manuals for power plant in Guatemala. Prepare ash disposal plan and mitigation plan. Conduct noise monitoring during steam blow activities. Provide environmental support for San José Power Plant and coal receiving facility. • West Georgia Generating Facility—Environmental permitting for 680-MW facility in Thomaston, Georgia. • Oregon Cogen—Licensing and permitting feasibility for a new cogeneration power plant in Lincoln County, Oregon. • EGI Assets—Environmental review of power plants in Costa Rica, Guatemala, and Panama. • OUC Indian River Plant Study—Conducted evaluation of revisions to existing oil-fired power plant. • Panama Power Plant Study—Conducted preliminary environmental assessment of a proposed 50-MW diesel engine-driven plant.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 19 of 20)

Power Company	Experience
TPS Corporation (Continued)	• Hardee Power Station—Revise integrated contingency plan. Assist with preparation of 1998 toxic release inventory report. PSD application and modification of site certification for new CT unit. Reviewed draft Title V permit for 295-MW CT facility. Prepared 1996, 1997, and 1998 annual Florida emissions fee and operating report forms. Prepared a comprehensive facility emergency response and pollution prevention plan. Evaluated percolation rates and water quality in cooling pond. Title V emissions inventory and permit application preparation for Units 1 and 2. Prepared state permit including both industrial waste water and storm water discharges and associated mixing zones under Florida program. Conducted environmental health and safety audit and annual BMP refresher training. • Audit—Provided audit oversight of employee pension plan audit. • Site Screening—Survey for relocation of shop operations. • Pavana Power—Due diligence and environmental permitting assessment of 60-MW diesel facility in Honduras. • Guatemala—Conducted dispersion modeling of impacts from proposed coal-fired power plant. • Red Hills Generating Facility—Environmental audit review of 440-MW atmospheric circulating fluidized bed power plant and lignite mine in Choctaw County, Mississippi. • Colombia—Conducted due diligence assessment of a 163-MW power plant. • Escuintla, Guatemala—Environmental impacts evaluation associated with purchase and operation of a GE CT. • Guatemala—Fatal flaw analysis of two locations for fluidized bed combustion cogenerating facility. • Vitória, Brazil—Permit analysis for proposed new power plant. • Siting in Panama—Environmental siting, fatal flaw analysis, and licensing support for 100-MW CC plant in Free Zone near Panama City, Panama. • Panasoffkee Site—Licensing studies for a 660-MW CC facility. • Valencia/Tohkala Site—Licensing studies and field data collection efforts for a 660-MW CC facility. • Feasibility Study—Environmental feasibility study for a coastal power plant at Yabucoa, Puerto Rico.
TECO Energy, Inc.	• Griffis Gas—Due diligence assessment prior to purchase. Included five retail operations centers and eight refueling bulk storage facilities. • Transactional Audit—Conducted audit of Lykes Energy, Inc., and its subsidiary Peoples Gas System, Inc., the largest natural gas distributor in Florida in support of purchase of Lykes by TECO Energy for $300 million. Audit included 87 properties in 15 counties, bulk propane storage facilities, and eight former manufactured gas plant sites. • Pasco Cogeneration—Performed audit of 108-MW CC cogeneration facility to support acquisition of the facility.
TECO Peoples Gas	• Risk Management Planning—Prepare risk management plans of bulk storage locations and customer sites. Includes the evaluation of 39 bulk plants and 59 customer sites throughout Florida.

Table 2. ECT Staff Selected Power-Related Company Experience (Continued, Page 20 of 20)

Power Company	Experience
TECO Power Engineering and Construction, Inc.	• Closure Assessment—Closure of a leaking ground transformer at the University of Tampa
TPS International Power, Inc.	• Audit of EEGSA Substations/Service Areas—Environmental site audits of 38 substations and 5 service centers to support privatization transaction of the facilities. • Pavana Power Plant—Prepared EIA for 100-MW diesel engine plant in San Lorenzo, Honduras.
Tractebel Power, Inc.	• Florida Siting—Assist in identifying and evaluating potential sites for CC power plant development.
U.S. Generating Company	• Cedar Bay Facility—Provide due diligence evaluation of waste disposal options. • Orlando Utilities Commission (OUC) Proposal—Assisted in proposal preparation for possible licensing of a CC power plant and/or purchase of a power plant for OUC. • Proposed Tallahassee Power Plant—Site evaluation/fatal flaw analysis and bid preparation for proposed CT power plant in Wakulla County, Florida. • Indiantown Cogeneration Plant—Resource mapping, field data collection, bathymetric, impact studies, wildlife surveys, and salt drift monitoring plan for 330-MW coal-fired cogeneration project in Martin County, Florida. Prepared NPDES permit application for industrial wastewater and storm water associated with industrial activities. Conducted 5-year wetlands monitoring, including qualitative wildlife and vegetative monitoring survey. • Site Selection Study—Conducted site evaluation and selection for proposed power plant in South Carolina. • Site Selection Study—Conducted site evaluation and selection for proposed power plant in eastern North Carolina, including a Phase I audit of the site. • Okeelanta—Investigation to evaluate potential performance of a 600-acre percolation pond in southeast Florida.
West Georgia Generating Company, LP	• Thomaston Facility—Environmental permitting for 680-MW power facility in Thomaston, Georgia. Includes PSD, wetland, and storm water permits.
Westinghouse Power Generation	• Database—Prepared a BACT database for CTs throughout the United States.
Wisconsin Electric Power Company	• Lake Michigan—Beach erosion and sediment transport survey. • Ozaukee County Site, Lake Michigan—Continuous temperature and current monitoring, dye studies and plume modeling for siting study. • Port Washington Site—Continuous temperature, current monitoring and bathymetry for siting study.

Source: ECT, 2000.

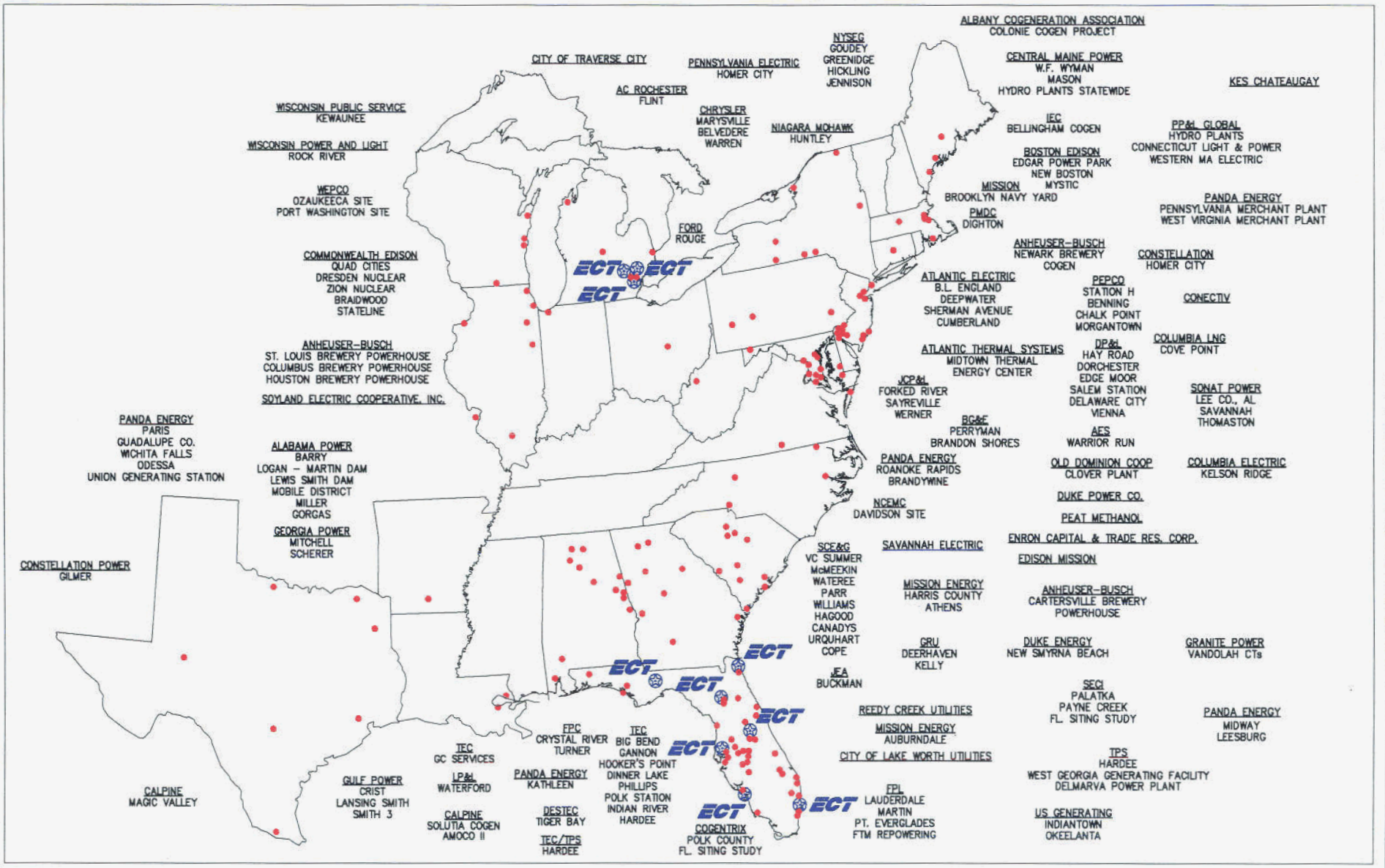


FIGURE 1.

ECT STAFF POWER PLANT EXPERIENCE

EASTERN UNITED STATES

Source: ECT, 2000.

ECT

Environmental Consulting & Technology, Inc.

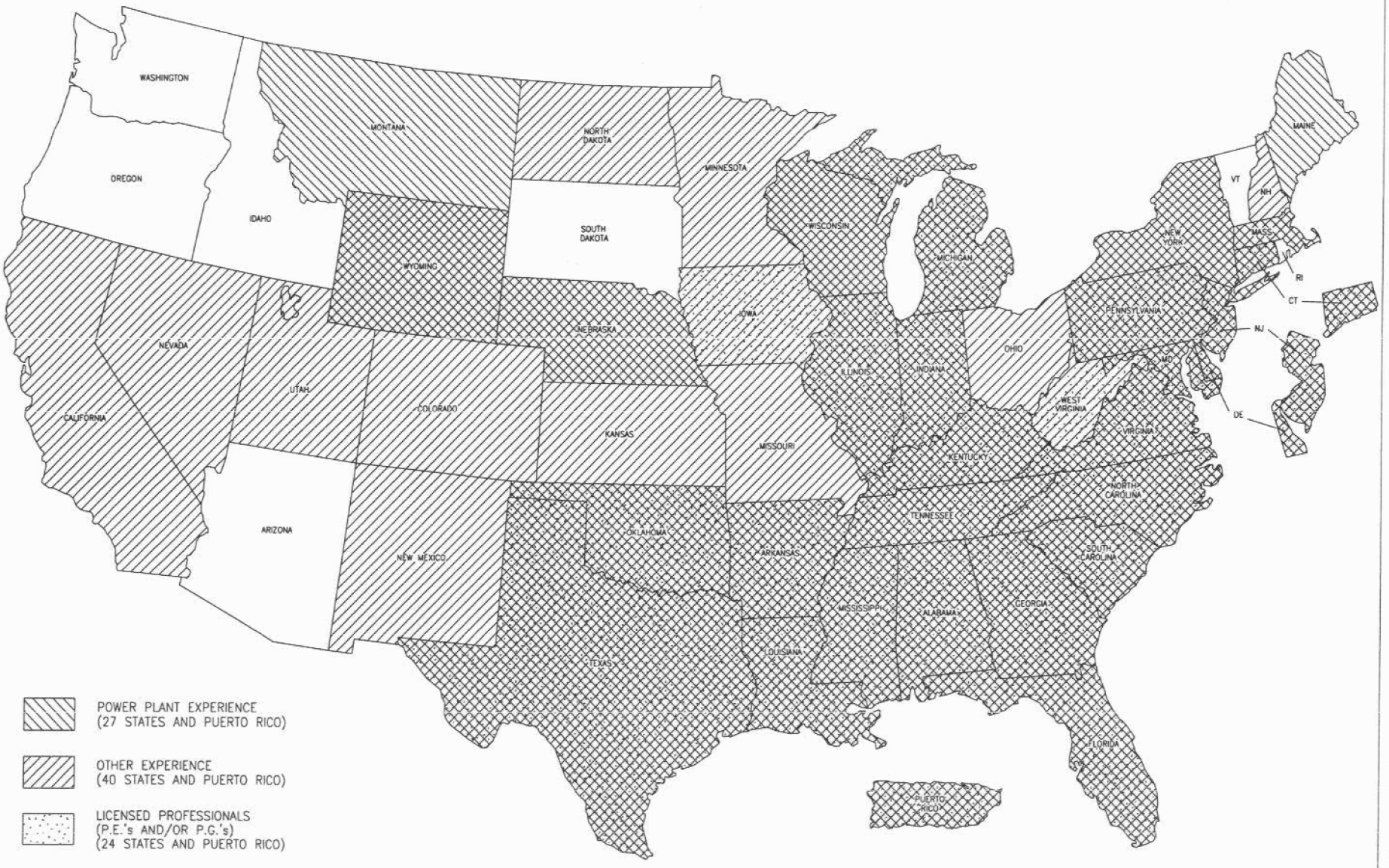


FIGURE 2.

ECT STAFF EXPERIENCE IN THE CONTINENTAL UNITED STATES AND PUERTO RICO

Source: ECT, 1999.

ECT

Environmental Consulting & Technology, Inc.

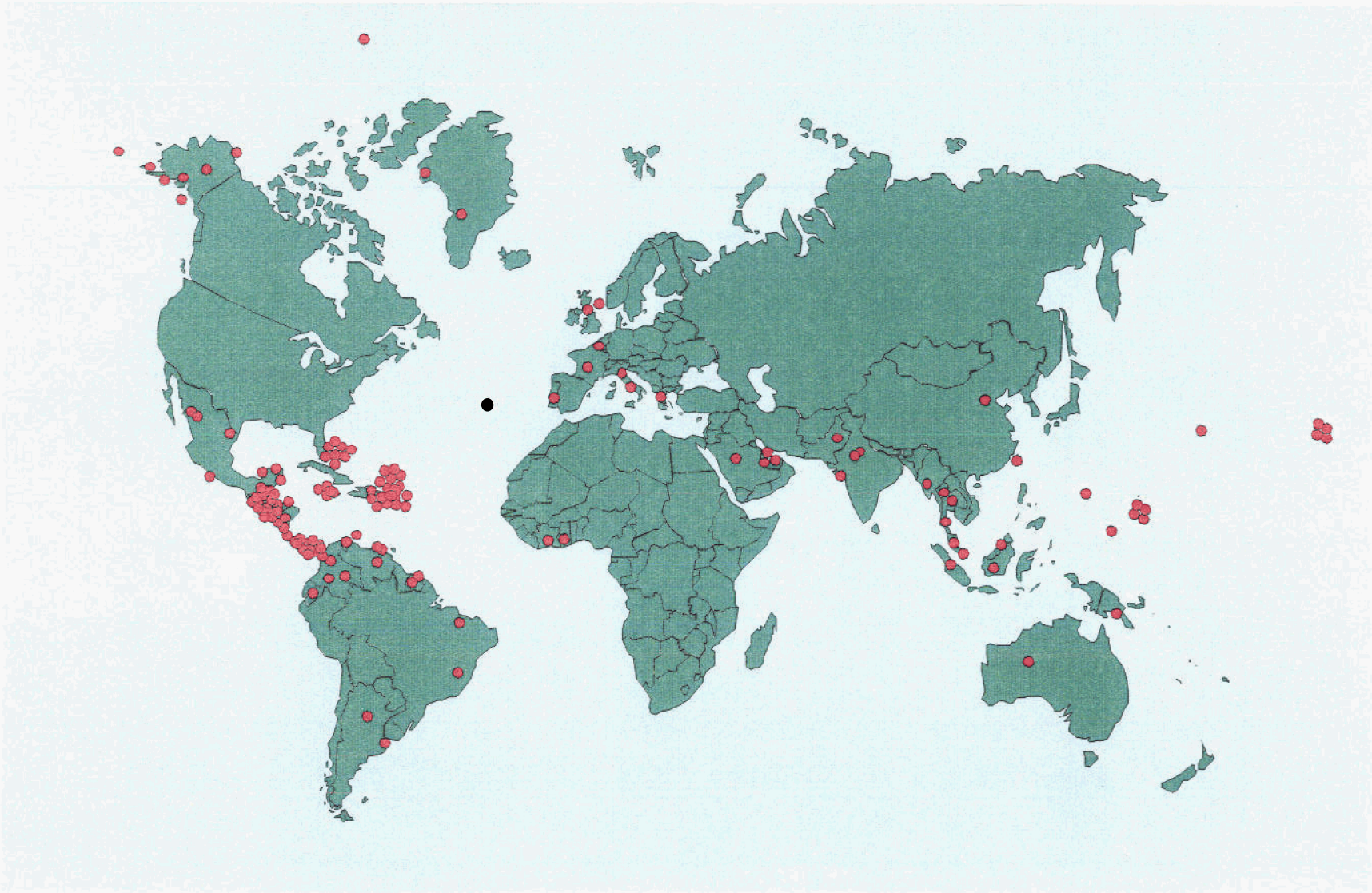


FIGURE 3.

ECT STAFF EXPERIENCE OUTSIDE THE 48 CONTIGUOUS UNITED STATES

Source: ECT, 2000.

ECT
Environmental Consulting & Technology, Inc.

REPRESENTATIVE PROJECT DESCRIPTIONS

PROJECT TITLE:	Site Certification Application (SCA) for the 500-MW New Smyrna Beach Power Project
LOCATION:	New Smyrna Beach, Volusia County, Florida
CONTACT NAME:	Kathy D. Ayan, P.E.
CLIENT:	Duke Energy North America
ADDRESS:	Environmental Affairs and Engineering Support 400 S. Tryon Street, Suite 1800 Charlotte, NC 28202
TELEPHONE NUMBER:	704/382-2705
PROJECT NUMBER:	98-170
CONTRACT PERIOD:	February 1998 through Present
CONTRACT AMOUNT:	$550,000

PROJECT DESCRIPTION

ECT was contracted by Duke Energy to take the lead on the licensing of the first merchant power generation facility proposed in Florida. ECT's first tasks were to (1) prepare a plan of study, which was presented to and gained the approval of the Florida Department of Environmental Protection (FDEP) and other reviewing agencies, including the St. Johns River Water Management District (SJRWMD), and (2) provide support to the Determination of Need phase of the licensing process. ECT next conducted the agreed-upon ecological and other field studies and data collection efforts and assessed the potential impacts of the project. Extensive studies were completed in support of the project's proposed water supply plans. These studies included a thorough analysis of water supply alternatives and development and execution of a detailed hydrological model to evaluate the impacts of proposed withdrawals of ground water from onsite wells. ECT hydrogeologists also directed the installation of an onsite well to collect water quality samples.

All of the multidisciplinary environmental data collection and impact analysis efforts and permit application materials were assembled into a 5-volume SCA, which was submitted to FDEP in October 1998. The SCA was deemed administratively complete without comment and was ultimately deemed technically sufficient in January 1999.

Throughout the SCA preparation and post-submittal periods, ECT led or supported the coordination efforts with FDEP, SJRWMD, and other key agencies. Numerous meetings were held to address agency issues, keep the review process on track, and negotiate the conditions of certification. Especially close contact was maintained with SJRWMD staff on water supply matters, which focused on identifying additional sources of treated effluent to reduce the need for ground water.

PROJECT DESCRIPTION (Continued)

ECT staff also presented expert testimony at the appropriate stages of the project. Testimony was given to the Florida Public Service Commission during the need phase in the fall of 1998 and to the FDEP administrative law judge at the land use and certification hearings in January and May 1999, respectively. All three of these hearings were successfully completed. ECT staff also participated in presentations to the governor and cabinet, sitting as the Siting Board.

PROJECT TITLE:	Environmental Impact Assessment and Permitting for the 120-MW San José Power Plant
LOCATION:	Puerto Quetzal, Guatemala, C.A.
CONTACT NAME:	Paul L. Carpinone, P.E. TECO Power Services Corporation (TPS) P.O. Box 111 Tampa, FL 33601-0111
CLIENT:	Central Generadora Eléctrica San José, Ltd. 13th Street 3-40, Zone 10 Atlantic Building, 5th Floor, Suite 503 Guatemala City, Guatemala, C.A.
TELEPHONE NUMBER:	813/228-4858 (Paul Carpinone)
PROJECT NUMBER:	95-626
CONTRACT PERIOD:	December 1996 through September 1997
CONTRACT AMOUNT:	$367,078

PROJECT DESCRIPTION

ECT prepared an environmental impact assessment (EIA) and other permit applications for a 120-MW coal fired power plant in Puerto Quetzal, Guatemala. This power plant will be constructed by the Central Generadora Eléctrica San José, Ltd., a Guatemalan company owned by TPS San José LDC, Coastal Power Guatemala, Ltd., and Compañía Eléctrica de Centroamérica. TPS San José, LDC, and Coastal Power Guatemala, Ltd. are wholly-owned subsidiaries of TPS in Tampa, Florida and Coastal Power Company in Houston, Texas, respectively.

The project consists of a nominal 120-MW pulverized coal-fired power plant and associated facilities including construction of a new shipping channel and dock for coal delivery and handling. The plant will be located within Puerto Quetzal, Guatemala and will provide electricity to the Empresa Eléctrica de Guatemala, S.A. The facility will be called the San José Power Plant.

The EIA report included descriptions of the proposed project, affected environment, project impacts and mitigation measures, and environmental management and monitoring programs. ECT was responsible for conducting baseline field studies including ambient air quality, water quality, ecology, and noise studies. This report was submitted to the Comisión Nacional del Medio Ambiente (CONAMA), which is responsible for the issuance of environmental permits for the construction and operation of the facility. In addition, ECT was responsible for preparing and obtaining the municipal permit for the construction of the proposed facility. ECT was also responsible for preparing and obtaining approval from the Ministry of Energy and Mines for the con-

struction of the facility's 60,000-gallon, above-ground, fuel oil storage tank. To expedite approval of the project, ECT made several presentations to CONAMA representatives. Since this was the first coal-fired plant proposed in Guatemala, key issues included coal delivery, handling, and storage; ash by-product storage and disposal; air quality impacts; and wastewater treatment and discharge.

The EIA was also prepared to meet the environmental review policies of several multilateral financial institutions that may participate in insuring and providing financing for the project, such as the Overseas Private Investment Corporation (OPIC), International Finance Corporation (IFC), and Inter-American Development Bank (IDB). The impact analyses for the project focused on demonstrating that the project would meet the various versions of the World Bank environmental guidelines for thermal power plants used by these institutions.

PROJECT TITLE:	Environmental Impact Study and Permitting for the 78-MW Alborada Power Plant
LOCATION:	Escuintla, Guatemala
CONTACT NAME:	Paul L. Carpinone, P.E.
CLIENT:	TECO Power Services Corporation (TPS)
ADDRESS:	702 North Franklin Street Tampa, Florida 33602
TELEPHONE NUMBER:	813/228-4858
PROJECT NUMBER:	94-692
CONTRACT PERIOD:	December 1994 through September 1996
CONTRACT AMOUNT:	$240,762

PROJECT DESCRIPTION

ECT and their subcontractor Asesoría Basterrechea, S.A., conducted an environmental impact study for a 78-MW power plant near Escuintla, Guatemala. This power plant will be constructed for Empresa Electrica de Guatemala, S.A. (EEGSA). The basic system consists of two oil-fueled gas turbines operating in simple cycle. The facility, however, is designed for eventual expansion to a combined-cycle facility that will include a heat recovery steam generator (HRSG) and steam turbine and associated facilities.

The environmental impact study report prepared by the team included a description of the proposed project; description of the affected environment (including climate, physiography, geology, soils, water quality, flora and fauna, socioeconomics, infrastructure, and archaeology); and impacts resulting from the construction and operation of the facility. The air and water permits required for this project were obtained as a result of the environmental impact study. In addition, the team was responsible for preparing and obtaining the municipal approval for construction of the proposed facility, an oil storage facility permit, a mitigative contingency plan, and a health and safety plan. These permits or approvals, as well as the air and water quality permits and monitoring plan, were prepared in accordance with the standards of Guatemala's Comision Nacional del Medio Ambiente (CONAMA) and World Bank guidelines.

PROJECT TITLE:	Environmental Siting and Permit Planning Study for 130-MW, Oil-fired, Combined Cycle Power Plant
LOCATION:	Panama
CONTACT NAME:	Paul L. Carpinone, P.E.
CLIENT:	TECO Power Services Corporation (TPS)
ADDRESS:	702 North Franklin Street Tampa, Florida 33602
TELEPHONE NUMBER:	813/228-4858
PROJECT NUMBER:	95-284
CONTRACT PERIOD:	May 1995 to July 1995
CONTRACT AMOUNT:	$14,397

PROJECT DESCRIPTION

This phase of the project involved the environmental siting and permit planning for a 130-MW, oil-fired, combined cycle power plant in Panama. ECT and its local subcontractor Latinoamericana de Gestión Ambiental, S.A. (LAGA) evaluated various sites for the proposed power plant. Existing initial information on ecology, air quality, water resources, transportation, and socioeconomics necessary for siting evaluation were collected by the ECT/LAGA team. This team also has conducted a preliminary field reconnaissance. In addition to collecting environmental data necessary for site selection, the ECT/LAGA team evaluated the various environmental regulations germane to this project. The principal environmental agency in Panama is the Instituto de Recursos Naturales y Renovables (INRENARE). The Government of Panama is currently studying the U.S. National Environmental Policy Act (NEPA) regulations as a model for future environmental regulation reform. During the permitting phase of this project, the ECT/LAGA environmental team will have to ensure that the project complies with all of the requirements of INRENARE and The World Bank, as well as address the concerns of other environmental groups such as ANCON (a local environmental group analogous to the Sierra Club). ECT will also be responsible for identifying and filling any gaps that may exist between INRENARE and The World Bank, and for completing the environmental assessment which will include a complete description of the affected environment and an assessment of the environmental impacts associated with the construction and operation of the power plant and its associated facilities.

PROJECT TITLE:	Air Quality Monitoring Station Construction and Training
LOCATION:	Punta Cardón, Venezuela
CONTACT NAME:	Jesús Docabo P.
CLIENT:	Refineria Cardón Maraven S.A.
ADDRESS:	Punto Fijo, Estado Fallon, Venezuela
TELEPHONE NUMBER:	011-58-69-402154
PROJECT NUMBER:	92-678/94-028
CONTRACT PERIOD:	December 1992 through May 1994
CONTRACT AMOUNT:	$544,130

PROJECT DESCRIPTION

ECT constructed, installed, and maintained two mobile ambient air monitoring stations for sulfur dioxide, nitrogen oxides, total suspended particulates (TSP), inhalable particulates (PM_{10}), and methane/nonmethane hydrocarbons. One station also was equipped with a 10-meter meteorological tower for measuring horizontal wind speed and direction, vertical wind speed, and air temperature. The stations were self-contained and computer controlled to allow for daily automatic calibration checks and data storage for continuous pollutant and meteorological data. The TSP and PM_{10} samplers ran for 24 hours in accordance with the U.S. Environmental Protection Agency's National 6-Day Sampling Schedule. A third air monitoring station was constructed and installed later by ECT that was capable of operating in a Class I, Division 2, Groups C and D (hazardous) environment. This latter monitoring station also measured hydrogen sulfide, carbon monoxide, and barometric pressure. In addition to constructing and installing these air monitoring stations, ECT also prepared and provided standard operating manuals and training for Refineria Cardón Maraven S.A. station operators and data managernent personnel.

PROJECT TITLE:	Yabucoa 300-MW Integrated Gasification Combined Cycle (IGCC) Energy Project
LOCATION:	Yabucoa, Puerto Rico
CONTACT NAME:	Gordon Gillette
CLIENT:	TECO Power Services Corporation (TPS)
ADDRESS:	P.O. Box 111 Tampa, FL 33601-0111
TELEPHONE NUMBER:	813/228-4492
PROJECT NUMBER:	93-175
CONTRACT PERIOD:	April through October 1993
CONTRACT AMOUNT:	$66,608

PROJECT DESCRIPTION

ECT was retained by the Yabucoa Energy Park Consortium (TPS, Texaco Alternate Energy, General Electric Company, and Bitor American Corporation) to perform environmental studies for licensing a 300-MW IGCC electric generating facility in Yabucoa, southeastern Puerto Rico. ECT, working with its Puerto Rican subcontractor CMA Architects and Engineers, conducted a reconnaissance of the four sites being considered in the Yabucoa Valley and collected historical data from the agencies and libraries in Puerto Rico and the United States. The collected information was used to prepare an environmental feasibility and fatal flaw assessment report that included a description of each of the four sites, potential problems associated with these sites, a detailed description of the affected environment, and an overview of relevant United States and Puerto Rican environmental regulations. Regional and site-specific environmental constraints were discussed as well as possible mitigative or alternative measures to circumvent these potential constraints. The specific issues examined by ECT included: (1) water supply, (2) wastewater discharge (including the possibility of an offshore ocean discharge, (3) flooding of the Yabucoa Valley, (4) air quality (5) noise, (6) zoning and land use, (7) geology and soils, (8) ecology (including the possible impacts to nearby coral reefs and fishing grounds), and (9) archaeological and historical resources. Given the tight deadlines, virtually all of the data used in the evaluation were existing data. A field reconnaissance augmented this information. The existing data were obtained from the National Climatic Data Center, National Oceanic and Atmospheric Administration, U.S. Geological Survey, Environmental Protection Agency, Federal Highway Administration, Puerto Rico Planning Department, and the University of Puerto Rico.

PROJECT TITLE:	Environmental Impact Study of an Offshore Ocean Discharge from a Fertilizer Manufacturing Plant—Physical Oceanography and Numerical Modeling
LOCATION:	Lázaro Cárdenas, Michoacán, Mexico and the Eastern Pacific Ocean
CONTACT NAME:	Eduardo Luis Castillo
CLIENT:	Consorcio en Ecologia Aplicada, S.A. de C.V. (CEA)
ADDRESS:	Torreón No. 16 Col. Roma Sur Mexico, D.F. 06760
TELEPHONE NUMBER:	564-9612
PROJECT NUMBER:	94-332
CONTRACT PERIOD:	July 1994 through July 1995
CONTRACT AMOUNT:	$74,230

PROJECT DESCRIPTION

Fertilizantes del Balsas, S.A. de C.V. (a subsidiary of the Fertinal Group) operates a fertilizer plant located on the west coast of Mexico. This fertilizer plant currently discharges its effluent in the nearshore zone of the Pacific Ocean. In order to reduce the environmental impacts of this nearshore discharge, the Comisión Nacional del Agua (CNA) has instructed Fertinal to evaluate various alternative discharge scenarios--all of which involve moving the discharge farther offshore. As a subcontractor to CEA, ECT was responsible for designing and overseeing the physical oceanographic and numerical modeling studies required for assessing the impacts of the existing and various proposed offshore ocean discharges from the fertilizer plant. In addition, ECT assisted CEA in designing the field sampling effort for water quality, sediments, and benthic organisms. Current velocity and temperature were collected using Endeco® Model SSM-174 current meters deployed in the Pacific Ocean just seaward of the breaker zone. The current meter mooring was designed by ECT to be light enough to be transported and deployed from a small boat and yet rugged enough to withstand the harsh environment of the nearshore Pacific Ocean. The data collected by the current meters were downloaded to a microcomputer for subsequent data reduction and statistical analysis. Numerous data products including statistical tables, time-series plots, and frequency plots were prepared for presentation in the final report. The impacts of the existing discharge were based on the results of the field surveys and existing historical data. The projected impacts of the proposed discharge alternatives were based on the results of numerical modeling using EPA's Cornell Mixing Zone Expert System (CORMIX) model. Using CORMIX, ECT modeled the impacts of the proposed discharge for three distances offshore. The field measurements and current meter data were used to calibrate and run the CORMIX model. In addition, ECT addressed the potential impacts associated with the construction of the proposed discharge.

PROJECT TITLE:	Site Certification Application (SCA) and Environmental Impact Statement (EIS) for 1,150-MW Electric Power Plant
LOCATION:	Polk Power Station (PPS), Polk County, Florida
CONTACT NAME:	Gregory M. Nelson, P.E.
CLIENT:	Tampa Electric Company (TEC)
ADDRESS:	Environmental Planning Department 6944 U.S. highway 41 North Apollo Beach, FL 33572-9200
TELEPHONE NUMBER:	813/641-5016
CONTRACT PERIOD:	December 1990 through June 1994
CONTRACT AMOUNT:	$3,300,000

PROJECT DESCRIPTION

ECT prepared an SCA, equivalent to an EIS, for a 1,150-MW electric power plant which included a U.S. Department of Energy (DOE)-sponsored coal gasification/combined cycle component. After contract award, ECT prepared a plan of study (POS) describing ECT's approach to environmental monitoring. This POS was reviewed by federal, state, and local agencies and approved. ECT conducted environmental monitoring which included a full year of ambient air quality monitoring, 6-month surface water and ecological monitoring, geological and geohydrological investigations, and socioeconomic and cultural studies. These data augmented existing data. From the information collected, baseline descriptions of the affected environment were prepared. The data were also used to assess the impacts of construction and operation of the proposed power plant and associated linear facilities (transmission lines and pipelines) on the environment and to evaluate various alternatives. Sophisticated numerical models were used to assess the impacts to air quality and surface and ground water quality.

ECT environmental engineers worked closely with TEC's engineering contractor to design a power plant that would comply with environmental regulations. Because the power plant site was formerly a phosphate mine, ECT scientists and engineers developed a reclamation plan that included the power plant and was acceptable to Florida agencies. ECT staff, working in concert with TEC's legal counsel, regularly represented TEC in meetings with federal, state, and local agencies, as well as public meetings.

PROJECT DESCRIPTION (Continued)

In addition to preparing the 3,500-page SCA, ECT prepared an environmental information volume for DOE. Moreover, ECT was responsible for preparing the applications necessary for federal, state, and local permits including the National Pollutant Discharge Elimination System permit, Joint (U.S. Army Corps of Engineers and the State of Florida) Permit for Works in the Waters of Florida, the prevention of significant deterioration permit, water use permit, surface water management conceptual permit, and a zoning conditional use permit. ECT also assisted in the review process of the EIS, prepared by another consulting firm.

PROJECT TITLE:	Third-Party Environmental Impact Statement (EIS) for 1,600-MW Coal Gasification/Combined Cycle Electric Power Plant
LOCATION:	Martin County, Florida
CONTACT NAME:	Wayne C. Ondler
CLIENT:	Florida Power & Light Company (FPL)
ADDRESS:	P.O. Box 14000 Juno Beach, FL 33408
TELEPHONE NUMBER:	561/691-2270
PROJECT NUMBER:	90-088
CONTRACT PERIOD:	May 1990 through May 1991
CONTRACT AMOUNT:	$319,762

PROJECT DESCRIPTION

ECT as contractor to the U.S. Environmental Protection Agency (EPA), Region IV, prepared a third-party EIS for FPL's 1,600-MW coal gasification/combined cycle electric generating facility. This project, located in Martin County, Florida, was determined by EPA to represent a major action requiring a new source National Pollutant Discharge Elimination System permit. Using information obtained from FPL's site certification application as well as numerous other documents and information obtained from FPL and FPL's engineering contractors, ECT prepared a description of the affected environment, evaluated construction and operational impacts, and evaluated alternative actions and technologies. ECT's scientists and engineers prepared a comprehensive draft EIS (DEIS) and final EIS (FEIS), and presented expert witness testimony during public certification hearings.

The schedule for this contract was very aggressive. ECT staff had to prepare a preliminary DEIS for review by EPA within 2 months. This preliminary DEIS was then revised by ECT, printed, and distributed to the agencies and public for review and comment within 5 months. Following the various reviews and the EPA Public Hearing, an FEIS was prepared by ECT, printed, and distributed. EPA Region IV considered these EIS documents some of the best documents ever prepared by a third party for EPA.

PROJECT TITLE:	Environmental Licensing for the 230-MW Panda-Brandywine Combined Cycle Cogeneration Power Plant
LOCATION:	Brandywine, Maryland
CONTACT NAME:	Joe Brinson
CLIENT:	Panda-Brandywine, L.P.
ADDRESS:	4100 Spring Valley, Suite 1001 Dallas, TX 75244
TELEPHONE NUMBER:	972/980-7159
PROJECT NUMBER:	92-153
CONTRACT PERIOD:	April 1992 through January 1996
CONTRACT AMOUNT:	$1,631,000

PROJECT DESCRIPTION

Panda Energy Corporation retained ECT to conduct environmental licensing and permitting studies for their 230-MW cogeneration facility, 5-mile-long transmission line, 6.5-mile-long gas pipeline, and 17-mile-long treated effluent pipeline near Brandywine, Maryland. This facility, in addition to providing steam to a collocated distilled water production plant, provides electricity to the Potomac Electric Power Company (PEPCO).

ECT scientists and engineers conducted environmental studies in support of licensing and permitting for the cogeneration facility and associated linear facilities. These studies included the identification and collection of existing air quality data which were used to describe the air resources and existing air pollution sources of the region, and model the impacts of the proposed facility on air resources. This information was incorporated into a prevention of significant deterioration (PSD) permit application. In addition to air quality, ECT also conducted surface water, ground water, ecological, noise, socioeconomic, and cultural resources investigations for the proposed project. Although ECT scientists, where possible, relied on existing long-term data for these investigations, some field monitoring to augment existing data were considered essential for this project. Therefore, ECT's field monitoring included the collection of streamflow and surface water quality data, ground water data (which included a 72-hour well test and water quality sampling), aquatic and terrestrial ecology data, and ambient noise data. In addition, ECT planners conducted several field surveys to verify and update socioeconomic and cultural resource information.

The historical and field data were used to prepare baseline descriptions of the affected environment and assess the impacts resulting from the construction and operation of the cogeneration facility and associated linear facilities. A certificate of public convenience and necessity (CPCN), equivalent to an environmental impact statement, was prepared to present the baseline data and to describe the predicted impacts due to construction and operation. Panda-Brandywine was the first—and, to date,

only—project by a non-utility generator to successfully complete the CPCN process. In addition to the PSD permit application, ECT staff also were responsible for preparing the water appropriation and use and NPDES permit applications as well as obtaining the necessary approvals for storm water plans for the proposed facilities, all of which were appended to the CPCN environmental review document. Key ECT staff provided expert witness testimony during the hearing phases of the CPCN licensing process.

Upon successful completion of the CPCN licensing effort, ECT was responsible for a number of related permitting efforts. These included wetlands (dredge and fill) permitting along the 23 miles of linear facilities routes, industrial wastewater discharge permitting, preparation of various oil storage plans (e.g., spill prevention, control, and countermeasure [SPCC] plan), Fuel Use Act certification, and a visual impacts mitigation study, among others.

Finally, in addition to the environmental licensing efforts, ECT provided essential support to Panda's project financial closure process. ECT supported this process by conducting rigorous assessments of contamination potential for both the main project site and the linear facilities corridors. The results of these audits were supplied for review by legal and financial institutions. ECT also provided expert opinions at various points in the closure process as to the project's ability to obtain all necessary permits and to comply with all environmental regulations.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States

Client	Project Location	Project Description
A T & T	Magans Bay, U.S. Virgin Islands	Prepared plans, specifications, and bid documents for installation of two underground storage tanks with interstitial monitoring.
Abadean Engineering, Ltd.	Nassau, New Providence, Bahamas	Conducted a baseline indoor air quality assessment at the Anglican Diocese offices. The sampling program had the following objectives: (1) indoor air and ambient background monitoring for hydrogen sulfide and methane at the facility to identify potential source areas; (2) conduct building occupant interviews to ascertain patterns, frequencies, and locations of odor emissions; and (3) evaluate and document existing plumbing and air conditioning systems within the facility.
Abu Dhabi Company	Jebel Dhanna, Abu Dhabi, United Arab Emirates	Conducted study to assess the impacts to subtidal, intertidal, and coral reef communities resulting from the discharge of ballast water from tankers.
Alexander Hamilton Airport	St. Croix, U.S. Virgin Islands	Vegetation mapping, animal and plant species inventories, and preparation of ecological impact sections of the environmental impact assessment for the runway extension.
Amoco Australia	Australia	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and monitoring-while-drilling (MWD) technology, and training of foreign nationals assigned to project.
Applied Technology and Management, Inc.	Paradise Island, New Providence, Bahamas	Coastal engineering and impact analyses for expansion of a marine lagoon system as part of a resort restoration.
AUTEC Range Services	Eleuthra Island, Bahamas	Removed asbestos containing materials, PCB-filled transformers, and petroleum contaminated soils associated with leaking underground storage tanks.
British Petroleum	England/Scotland	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
Brunei Shell Petroleum Company	Brunei and the South China Sea	Conducted benthic subtidal and intertidal ecological survey to assess the impact of production water discharge.
Bureau of Land Management	Gulf of Alaska, Cook Inlet, and Prince William Sound	Conducted biological oceanographic investigations to assess the impacts associated with offshore oil development and transportation.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 2 of 12)

Client	Project Location	Project Description
Calpine Corporation	Rio Bravo and Hermosillo, Mexico	Provided environmental support for proposals to construct CC power plants. Scope included plans for implementing ISO 14001 environmental management systems.
Caribe General Electric Products, Inc.	Various locations in Puerto Rico	Prepared a group NPDES storm water permit for three manufacturing plants and advised CGE on methods for meeting storm water effluent guidelines.
	Palmer, Puerto Rico	Prepared a storm water management plan and designed and installed a storm water monitoring system.
	Various locations in Puerto Rico	Title V emission inventories conducted at 11 plants.
	Eight facilities in Puerto Rico	Prepared Environmental Quality Board applications to achieve synthetic minor source status under Rule 211.
	Vega Baja, Puerto Rico	Prepared permit application for pyrolysis oven.
	Patillas, Puerto Rico	Completed reflow process emission calculations for service-mount components.
Central Generadora Eléctrica San José, Limitada	Masagua, Guatemala	EIA for 120-MW coal-fired power plant.
		Prepared quarterly and annual environmental monitoring reports for CONAMA and OPIC.
	Puerto Quetzal, Guatemala	Conducted an environmental impact study for a 120-MW coal-fired power plant and coal unloading facility in accordance with CONAMA and World Bank guidelines.
	Escuintla, Guatemala	EIA for proposed 150-MW coal-fired power plant.
Charigali	Malaysia	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
CMS Energy	Margaretta Island, Venezuela	Provided remediation estimate and technical document review for two power plants.
	Margaretta Island, Venezuela	Landfarming soil remediation for two power plants.
CMS Nomeco	Equatorial Guinea	Prepare a hazardous materials emergency response plan for oil and gas production facility.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 3 of 12)

Client	Project Location	Project Description
Coastal Power Company	Republic of Panama	Prepare EIA for diesel engine power plant in the Republic of Panama to fulfill in country and World Bank guidelines.
	Tipitapa, Nicaragua	Prepare EIA for Phase II, a 40-MW diesel engine expansion of existing 50-MW plant. EIS prepared to fulfill requirements of MARENA in Nicaragua and Inter-American Development Bank.
	Dominican Republic	Conduct thermal modeling for Itabo Power Plant to evaluate discharge pipe and diffuser configurations to meet World Bank guidelines.
		Environmental audit review of six Haina Generating Company power plants as part of privatization program.
		Due diligence services in the assessment of four power plants scheduled for privatization.
	Tipitapa, Nicaragua	Addendum to EIA to expand from 50 to 90 MW and obtain MARENA approval. Conducted continuous noise monitoring to establish background levels for use in demonstrating compliance with World Bank guidelines
	Panama	Reviewed environmental audits for four thermal power plants as part of potential purchase of the plants in privatization program.
	La Loceria, Panama	Prepared modification of EIS and conducted air dispersion modeling for 80-MW diesel power plant.
	Nejapa, El Salvador	Conducted air dispersion modeling.
Coastal Power Nicaragua, Ltd.	Tipitapa, Nicaragua	Prepared EIA for 50-MW diesel engine power plant which met Nicaraguan and World Bank environmental guidelines.
Consorcio en Ecologia Aplicada, S.A. de C.V. (CEA)	Lázaro Cádenas, Michoacán, Mexico and the eastern Pacific Ocean	Responsible for designing and overseeing physical oceanographic and numerical modeling to assess impacts of a new offshore ocean discharge for Fertilizantes del Balsas, S.A. de C.V. (a subsidiary of Fertinal) per Comisión Naciaonal del Agua (CNA) requirements.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 4 of 12)

Client	Project Location	Project Description
Constellation Power, Inc.	Panama City, Panama	Prepare EIA for diesel 54 to 74 MW Chinganola Power Plant in accordance with Panamanian requirements and World Bank guidelines
		Prepare EIA for diesel 54 to 74 MW San Martin Power Plant in accordance with Panamanian requirements and World Bank guidelines
	La Chorrera, Panama	Evaluation of environmental impacts associated with the addition of up to 48 MW of Wärtsilä engines.
	El Salvador	Due diligence for three power plants and evaluation of environmental compliance costs in support of bid to purhcase the plants..
	Republic of Panama	Conducted ESAs, including subsurface investigations for 14 diesel power plants and 18 substation sites in the Panama Noreste distribution system as part of privatization program.
	Nueva Esparta, Venezuela	Due diligence for purchase of an existing electric system consisting of 2 power plants, 22 substations, and transportation/distribution lines.
	Escuintla, Guatemala	Environmental permitting for proposed 60-MW diesel fuel-fired power plant in accordance with CONAMA and World Bank guidelines..
		Phase II ESA of S&S facility 36-MW combined cycle power plant.
Distilleria La Plata	La Plata, Argentina	Performed environmental audit and waste water characterization studies. Environmental samples were collected and analyzed.
Dominican Republic Department of Geology	Dominican Republic	Lithological logging of cores and cuttings in predominantly karst environment; part of an ongoing stratigraphic mapping and correlation effort by the Geological Survey of the Dominican Republic.
Edison Mission Energy	Puerto Rico	Conducted due diligence of LNG power plant being considered for purchase.
	Kui Buri, Thailand	Conducted noise modeling evaluation of a power plant.
Elektra Noresta, S.A.	Panama City, Panama	PCB sampling and remediation feasibility and cleanup at the Villalobos facility.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 5 of 12)

Client	Project Location	Project Description
Electricity Generating Authority of Thailand	Mae Moe and Khanom Estuary, Thailand	Conducted study of lignite- and coal-fired power plants to minimize impacts of solid and liquid wastes, determine minimum water quality criteria to permit offsite discharge, and studies to assess impacts of plant on estuary.
Empresa Electrica de Guatemala, S.A.	Guatemala	Due diligence Phase I environmental site assessment (ESA) for La Laguna oil-fired power plant and combustion turbine in conjunction with sale of these two stations.
Empresa Generadora de Electricidad Itabo, S.A.	Dominican Republic	Conduct Phase II ESA for five electric generating power plants.
Enron Engineering & Construction Company	Puerto Quetzal, Guatemala	EIA for 120-MW barge-mounted diesel engine power plant in Guatemala. EIA required to meet CONAMA and World Bank guidelines.
	Pto. Corinto, Nicaragua	EIA and other permits for 60-MW barge-mounted diesel engine power plant and a 40-km transmission line.
Exxon and Aramco	Arabian Gulf and Dharan, Saudi Arabia	Conducted an *in situ* bioassay to determine the impacts of crude oil, dispersed crude oil, and dispersant on Arabian corals.
Florida Power & Light Company	Bahamas	Assessed environmental, land use, and licensing implications associated with an undersea cable between Grand Bahama Island and southeast Florida.
G. Marconi Airport	Bologna, Italy	Noise and air monitoring study and modeling to assess impacts associated with airport operation.
General Electric	Various locations in Portugal, France, Belgium, Italy, and Saudi Arabia	Conducted environmental compliance audits, measured against host country's regulations, developed and implemented waste minimization programs, etc. for 42 facilities worldwide.
Greek National Oil Company	Greece	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
Grupo Generator de Guatemala y cia S.C.A.	Guatemala	Asbestos services and OSHA/NIOSH monitoring at power plant.
Gruppo ICA	Cancun, Mexico	Contamination assessment of former and current landfills.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 6 of 12)

Client	Project Location	Project Description
Guatemalan Generating Group	Escuintla, Guatemala	EIA and project support for a 5-MW test unit using Orimulsion®.
	Amatitlan, Guatemala	EIA for 90-MW combined cycle unit.
	Guatemala	Prepared EIA for a 120-MW Orimulsion® power plant.
Hydro-Quebec International	Panama	Reviewed environmental audit reports for four hydroelectric power plants and developed cost estimates for environmental liabilities to be addressed in purchase of the plants.
Illinova Generating Company	Lake Arenal, Costa Rica	Environmental due diligence for a wind-generating plant.
	Cali, Colombia	Reviewed regulatory framework for a proposed fossil fuel-fired power plant and prepared summary report.
Jamaica Department of Mines and Geology	Jamaica	Project coordination and well drilling and logging for EEC-funded irrigation project throughout Jamaica.
Jamaica Department of Agriculture	Jamaica	Collected and evaluated back reef detritus to determine impact of reef organisms on the formation and distribution of sediments in the back reef environment.
Johnson Controls World Services	Kwajalein Atoll, Republic of the Marshall Islands	Responsible for training island personnel in safe underground storage tank removal and associated sampling and oversaw removal of six tanks.
		Prepared environmental assessments onsite for three USAKA construction projects..
		Conducted a sandblast/abrasive grit evaluation at Kwajalein Atoll. This effort involved evaluation of surface preparation technologies used for environmental impacts, human exposure to metals or volatile organics, compliance with applicable regulations, and opportunities to improve effectiveness and waste reduction
Kennecott	Papua, New Guinea	Responsible for determining the environmental constraints placed on a new gold mining operation.
	Sonora, Mexico	Performed study to compare the financial impact of environmental controls at Mexican versus United States copper smelters.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 7 of 12)

Client	Project Location	Project Description
The LPA Group Incorporated	St. John, U.S. Virgin Islands	Conducted terrestrial, wetland, and aquatic ecology sampling and impact analyses associated with an environmental assessment of road improvements for the Government of the U.S. Virgin Islands.
Major Pharmaceutical Manufacturer	Caribbean Islands	Supervised installation and startup of ambient air monitoring site.
MAN B&W Diesel AG	Puerto Guetzal, Guatemala	Conduct thermal plume modeling for discharge from 124-MW diesel power plant barge.
	Nicaragua	Conducted thermal mixing zone modeling for testing of Corinto Power barge.
Middle South Utilities	Grand Bahama Island, Bahamas	Managed and conducted a power plant siting feasibility study.
National Science Foundation	Mexico, Belize, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Venezuela, Puerto Rico, and Jamaica	Conducted ecological studies, focusing on epiphyllous fungi and their hosts, including mangroves.
National Oceanic and Atmospheric Administration	North Aleutian Shelf, Alaska	Conducted physical oceanographic study with particular emphasis on locations and stability of ocean fronts and the source and transport of nutrients to the biota.
NATO	Terceira, Azores, Portugal	Responsible for asbestos abatement plan, work training, and project management.
Northern Telecom	Kwajalein Atoll, Republic of the Marshall Islands	Prepared an environmental assessment for USAKA's submarine fiber optic transmission system to 10 instrumented islands within the atoll.
Ogden Environmental & Energy Services	Arroyito, Argentina	Conducted a Phase I and II ESA for Genecor International.
Office of Naval Research	Arctic Ocean	Responsible for conducting multidisciplinary oceanographic investigations from Fletcher's Ice Island (T-3) operating generally at 86°N latitude.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 8 of 12)

Client	Project Location	Project Description
Panda Energy International, Inc.	Cali, Colombia	Site assessment, fatal flaw analysis, and permitting audit for potential power plant site development near Cali, Colombia, to provide power to Corporación Autónoma Regional del Cauca. ECT also provided in-country agency and local environmental consultant coordination.
	Luannan Region, China	Permit/data analysis and environmental assessment document translation in preparation of permitting a 100-MW coal-fired power plant.
Panjab Agricultural University	Ludhiana, India	Conducted field trials on the use of herbicides in field crops and the residual impacts of herbicides on soil, ground water, and vegetation. Conducted research trials on the use of industrial wastes as soil amending materials.
Petrobras	Brazil	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
PetroJam/Petro-Canada	Jamaica	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
Phillips Petroleum Company	Guayama, Puerto Rico	Prepared permit applications for a petroleum refinery.
	Côte d'Ivoire	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
	Ghana	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
Phillips Petroleum, Norway	North Sea and Stavanger, Norway	Managed and conducted an 2-year environmental impact assessment of what, at that time, was the largest recorded oil spill (Ekofisk-Bravo blowout).
Qatar Government	Qatar	Design and production of mobile air and water quality laboratories.
Refineria Cardon Maraven S.A.	Punta Cardon, Venezuela	Designed and built two ambient air monitoring stations to measure SO_2, NO_x, TSP, PM_{10}, methane/NMHC, and various meteorological parameters, and trained refinery personnel.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 9 of 12)

Client	Project Location	Project Description
Refineria ISLA	Curaçao, Netherlands Antilles	Responsible for constructing, installing, and maintaining two mobile ambient air monitoring stations for SO_2 and TSP as well as horizontal windspeed and direction, vertical windspeed, and air temperature. The data were used to validate a computer model and to determine the need for future ambient air monitoring.
	Curaçao, Netherlands Antilles	Performed waste water characterization studies on the plant and the waste water treatment system.
Rico Construction Company	Taipei, Taiwan	Supervised the construction of the Chenton railroad bridge, including pilings and piers.
Saba Power Company Ltd.	Lahore, Pakistan	Set up operations for an ambient air monitoring station. Obtained meteorological data, conducted modeling, and prepared a monitoring plan for support of monitoring site location.
Schlumberger	Singapore	Onshore training of foreign nationals, technology transfer, report completion, and logging unit preparation and maintenance.
Shell	Dominican Republic	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
SOHIO	Beaufort Sea, Alaska	Conducted a sediment monitoring program to assess the impacts to marine ecology resulting from the construction of SOHIO's Endicott Causeway.
	Endicott Peninsula, Alaska	Prepared quality assurance and health and safety plans, and performed field audits of fish studies in the Sagavanirktok River.
State Oil Company	Myanmar	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
Stats Oile/Gulf Oil	Suriname	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
Suriname Department of Resources	Paramaribo District, Suriname	Geologic analysis of cores and cuttings, total gas analysis, chromatography, and hydrogen sulfide monitoring for wells up to 10,000 ft deep.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 10 of 12)

Client	Project Location	Project Description
Tampa Centro Americano de Electricidad, Ltd.	San José, Guatemala	Prepare quarterly and annual environmental monitoring reports for the Alborada Power Plant.
	Escuintla, Guatemala	Environmental impact study (EIS) and permitting for 78-MW power plant in accordance with Guatemalan and World Bank guidelines. EIS completed in 6 weeks to meet critical construction schedule.
TECO Power Services (TPS) Corporation	Belize	Due diligence assessment of Belize Electricity Limited facilities in support of bids for privatization program..
	Guatemala	Prepare initial environmental audits and the environmental management and monitoring plan for 47 sites currently operated by EEGSA.
	San José, Guatemala	Provide environmental health and safety manuals for power plant in Guatemala. Prepare ash disposal plan and mitigation plan. Conduct noise monitoring during steam blow activities. Provide environmental support for San José Power Plant and coal receiving facility. Provide compliance services for San José Power Plant and Alborado Power Plant.
	Panama	Conducted preliminary environmental assessment of a proposed 50-MW diesel engine-driven plant.
	San Lorenzo, Honduras	Due diligence and environmental permitting assessment for 60-MW Pavana diesel power facility.
	Guatemala	Conducted dispersion modeling of impacts from proposed coal-fired power plant.
	Colombia	Conducted due diligence environmental assessment of a 163-MW power plant.
	Escuintla, Guatemala	Environmental impacts evaluation associated with purchase and operation of a GE combustion turbine.
	Guatemala	Fatal flaw analysis of two locations in Guatemala for fluidized bed combustion cogeneration facility.
	Vitória, Brazil	Permit analysis for proposed new power plant.
	Panama City, Panama	Environmental siting, fatal flaw analysis, and licensing support for 100-MW combined cycle plant in Free Zone near Panama City, Panama.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 11 of 12)

Client	Project Location	Project Description
TPS Corporation (Continued)	Yabucoa, Puerto Rico	Licensing feasibility study and fatal flaw analysis for a coastal 220-MW power plant located on the eastern coast of Puerto Rico; reuse of waste water and an ocean discharge were considered.
Texaco	Nassau, Bahamas	Contamination assessment of retail petroleum marketing facility. Distribution of hydrocarbons and subsequent remediation were controlled by karst nature of limestone island hydraulics.
Total (French national oil company)	Indonesia	Logging and interpretation of downhole data to determine petroleum reservoir potential using wire-line and MWD technology, and training of foreign nationals assigned to project.
TPS International Power, Inc.	Guatemala	Environmental site audits of EEGSA's 38 substations and 5 service centers to support privatization transaction of the facilities.
	San Lorenzo, Honduras	Prepared EIA for 100-MW diesel engine Pavana Power Plant.
Triton Environmental Services	Nassau, New Providence, Bahamas	Provided guidance in the formulation of a proposed scope of services for Bahamas Electricity Corporation's Clifton Pier Power Station for the abatement of asbestos-containing materials and other hazardous materials.
U.S. Air Force	Thule AFB, Greenland	Prepared environmental assessment addressing the effects of downsizing Thule AFB.
	Anderson AFB, Guam	Performed site investigations at petroleum spill sites and leaking underground storage tanks.
	Sondrestrom Air Base and Cruncher Island, Greenland	Conducted environmental review to determine extent of any contamination and provide technical direction and project oversight in removing contaminants prior to base closure.
	Mt. Haleakala, Maui, Hawaii	Designed modification to potable water treatment system.
	Oahu, Hawaii	Prepared storm water plans for Bellows AFS and Kaena Point Station.
		Performed site investigations at POL storage sites in Waikakualoa Gulch.
	Wake Island	Performed site investigation at fuel storage area.

Table 3. Summary of ECT Staff Experience Outside the 48 Contiguous United States (Continued, Page 12 of 12)

Client	Project Location	Project Description
U.S. Army	Delta Junction, Alaska	Performed site investigation at the Gerstle River Training Area.
	Oahu and Hawaii, Hawaii	Preliminary assessment at 11 former and current army facilities.
U.S. Army Corps of Engineers	St. Thomas, U.S. Virgin Islands	Performed ESAs of formerly used federal properties.
	Guyama, Guayanilla, Cayey, Fajardo, ElYunque, Mata Redondo, Rio Blanco, Humacao, Guanica, Aguadilla, Borinquen Dorado, San Juan, Point Figueras, and Arecibo, Puerto Rico	Performed ESAs of formerly used federal properties.
U.S. Environmental Protection Agency	Valdez, Alaska	Waste water studies of benzene, toluene, and other organics in the effluent from the bilge water treatment system at the Alaska Pipeline Terminal.
U.S. Navy	Roosevelt Roads, Puerto Rico	Performed preliminary characterization and confirmation studies at thirteen sites to determine possible dispersion and migration of hydrocarbons.
	Island of Vieques, Puerto Rico	Performed surface water quality studies.
	Adak, Alaska	Preliminary assessment studies to determine extent of contamination at hazardous waste disposal sites.
Water and Energy Research Institute	Western Pacific, Pingelap Atoll, Eastern Caroline Islands, Micronesia	Evaluated the hydrogeologic framework and freshwater lens of an uninhabited atoll island.
Water and Power Consultancy Services	Gujarat, India	Install and maintain directional wave gauge to measure sea state during the monsoon season for a harbor development.
World Bank	Pakistan	Evaluation of environmental impacts of lignite coal mine in Pakistan. Study performed to examine the environmental impacts associated with mining operations, including acid mine drainage, erosion, change in local drainage and loss of land use.

Source: ECT, 2000.