

**CONSULTANT**

Mr. Kirby has 33 years of experience at progressively senior levels of management in investment planning in the electrical power generation sector. He has conducting and managing numerous analyses of investments in both transmission and, mainly, generation. He is thoroughly familiar all aspects of investment planning in the power generation sector. His focus was enhancing value while managing risk. His work included:

- Identifying together with subject matter experts mitigating measures for nuclear power plant deterioration and to apply this in developing budgets and areas which may need additional funding to ensure performance and life
- Directing a multidisciplinary report analyzing a multi-pollutant strategy for controlling emissions from coal fired plants.
- Developing and conducting economic and risk assessments on system expansion plans
- Examining the feasibility of cogeneration projects, including the use of steam from a pulp and paper mills to generate electrical power, the use of a moderator waste heat at the Bruce nuclear power station.
- Conducting an analysis of the requirements of generation planning reserve requirement for use in public hearings.
- Analyzing the effects of non-dispatchable generation such as wind power on capacity needs and conducting studies estimating the reserve value that should be assigned to interconnection assistance based upon power on an if available basis.
- Estimating power purchases and sales and the value of upgrading transmission to accommodate them.
- Analyzing proposals for the long-term sale of electrical power to other utilities and proposals for the long term purchase of electrical power from other utilities.
- Supervising the implementation of an electrical system pricing model.
- Working in the evaluations and monitoring section of the energy management branch, which was charged with examining the after the fact success of energy conservation projects.
- Conducting numerous risk assessments
- Serving as chairman of the generation planning and operating subsection of the Canadian Electrical association.

Mr. Kirby has made use of this extensive background in providing advice to the Elenchus Research in their intervention in the hearings on the Integrated Power System plan on behalf of clients.

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## PROFESSIONAL OVERVIEW

### ELENCHUS RESEARCH ASSOCIATES (ERA INC.)

#### *Consultant*

#### *Responsible for:*

- Regulatory hearing interventions
- Engineering economics and financial analysis
- Market designs
- Computer modeling

### **Consultant to Elenchus Research Associates in their intervention into the Ontario Power Authority's (OPA) Integrated Power System Plans**

Assisted in the development of strategy for the Iranians I have hearings taking into account the ability of a properly designed plan to respond to future events as they unfold, commented on capacity needs, the impact of non-dispatchable renewable generation such as wind power on operability and capacity, and suggested interrogatories and questions for the cross examination of witnesses. These hearings are on hold while OPA assesses the impact of government directives on their plan.

### **Senior Manager, Ontario Power Generation, on Assignment to the Nuclear Life Cycle Planning Team 2002 to 2005**

- gathered technical information from subject matter experts to ensure that technical, financial and economic assessments were integrated across disciplines
- Together with technical experts challenged needs, looked for opportunities to enhance value, searched for alternatives, and assessed economic implications
- Analyzed feeder deterioration data at the request of the feeder Integrity project

### **Senior Manager, Ontario Power Generation, Market Forecasts & Models, Investment Planning 2000 - 2002**

- Managed a staff of 12 assessing investments and projects, developing models, and price forecasting
- Initiated in a multi-disciplinary team to develop a multi-pollutant air emission strategy:
- Conceived and directed development of an electricity interconnected market pricing model. Applied this model in forecasting
- Assessed major nuclear equipment issues; scoped and analyzed nuclear life cycle plans.

## **Supervising Planning Engineer, Model Support, Ontario Hydro, 1995 to 1999**

- supervised the development of models to assess economics, environmental impact, reliability and production cost
- Developed Monte Carlo decision analysis models
- Analyzed alternate market designs. Correctly predicted that very high spikes in hourly prices would have to occur, given the market designs being contemplated.

## **Senior Analyst, Evaluations, Energy Management Branch Ontario Hydro, 1992 to 1994**

- Managed a consultant in evaluating the success of energy conservation programs.
- Recommended a geographic information system as an innovative way of estimating the amount of commercial floor space in Ontario and suggested it be used the data platform for energy management
- Performed economic analysis and risk assessments on local integrated resource projects such as the Toronto Environmental Partnership

## **Supervising Planning Engineer Bulk Electricity Resources Planning, Ontario Hydro, 1981-1992**

- Reviewed generation reliability criteria
- Analyzed Demand/Supply Plan
- Analyzed individual projects, such whether or not to continue with Darlington
- Developed models for reliability analysis, production modeling, economic and risk Assessment
- Past Chairman of the Canadian Electrical Association's Subsection on Generation System Planning and Operations

## **Resource Planning Engineer System Planning, Interconnections, Ontario Hydro, 1977-1981**

- Assessed long term, billion dollar, firm power sales
- Forecast spot sales and availability of emergency assistance from interconnected utilities

## **Generation Concepts Engineer, Generation Concepts Department, Ontario Hydro, 1974 – 1977**

Conducted feasibility studies of:

- off-peak energy storage;
- underground feed water storage
- new generation technologies;
- advanced wind power turbines;
- waste heat utilization from the Bruce Nuclear Power Station
- formed a realistic view of the practical difficulties inherent in implementing new technologies

## **Ontario Ministry of Environment, Toxic Contaminants**

- Conducted studies of toxic contaminants such as asbestos
- Supervised field monitoring for lead and vinyl chloride

## **Approvals Engineer, Ontario Ministry of Environment, Air Resources 1972-1974**

- Developed statistical techniques for identifying pollution sources. These were accepted as “systematic and technical” at public hearings into lead pollution
- Assessed pollution emissions from industrial plant, calculated concentration of pollutants using models of atmospheric dispersion and supported negotiations with industrial concerns

## **Education**

- Bachelor of Applied Science (BASC.), University of Toronto, Engineering Science 1970
- Masters of Applied Science (MASC.), University of Toronto, Institute for Aerospace Studies 1972