

Ex. 53

LESLIE JOHNSTON
Associate

Education: B.Sc. (Chemistry), University of Toronto, 1965
Ph.D. (Analytical Chemistry), University of Toronto, 1969

Affiliations: Chemical Institute of Canada, Environment Division
(Executive 1978 to present, Chairman 1980-1981)

Languages: English

EMPLOYMENT HISTORY AND EXPERIENCE

1980 — Senior Environmental Chemist with M.M. Dillon Limited. Specialist services in support of engineering projects in the areas of chemical fate in the environment, risk assessment, environmental audits of industrial processes, spill mitigation and hazardous waste management.

Technical Supervisor in water pollution, control and management of hazardous materials, Ontario Hydro.

- Coordinator for Corporate Steering Committee on management of Hydro's PCB inventory.
- Technical specialist on processes for PCB destruction.
- Study coordinator for waterborne wastes from thermal generating stations including coal pile and ash disposal effluents, chlorine minimization, periodic boiler wastes and oily water effluents.
- Program Manager for monitoring thermal and noise emissions from six thermal generating stations.

1974-1980 Analytical Chemist with Ontario Hydro, Research Division. Prime responsibility to apply electro analytical technique to environmental and process analysis problems.

- Development of on-site real time chlorine analysis in outfalls from thermal generating stations.
- Development of on-site real time determination of hydrogen sulfide in outfall from Hydro's heavy water plant.
- Member of committee to review analysis problems at Canada's heavy water plants.
- Modification of standard methods of PCB analysis to meet Hydro's needs.

Senior Research Chemist at J. Roy Gordon Research Labs, Sheridan Park, International Nickel. Research development in metal recovery techniques for hydro-metallurgical processes. Process technology studies on specific water pollution projects.

LESLIE JOHNSTON

- Study to define options for ammonia removal from major plant effluent.
- Application of hydrogen reduction for nickel and copper recovery from hydro-metallurgical process streams.
- Application of reverse osmosis to process and pollution problems.
- Specialist in selective crystallization as a metal separation technique.
- Studies on special techniques of liming for metal recovery from aqueous process streams.

EXPERIENCE WITH DILLON

Preparation of guidelines for the prevention of contamination by polychlorinated dibenzofurans (PCDF) from fires involving PCB containing electrical equipment. Coordinated review of the chemistry of PCDF formation, the typical electrical installations, case histories of previous fires, regulating and decontamination/waste disposal aspects. Environment Canada.

Transportation, Storage and Transfer of Ammonia and Hydrogen Fluoride at Eldorado Nuclear Limited in Port Hope, Ontario. Coordinated a safety audit of engineering and emergency measures at Eldorado's Port Hope facility. Environment Canada.

State-of-the-Art Review of PCB Destruction Technologies. Reviewed destruction technologies for PCB that have been tested and/or approved for use in North America. Review included operational details, costs and environmental impacts. Environment Canada.

CN Chemical Spill - Wyoming Ontario. Provided technical assistance in study to examine extent of soil contamination and recommend mitigative measures at site of spill of a herbicide intermediate on a railway right-of-way. CNR.

Socio-Economic impact analyses (SEIA) of federal regulations and environmental codes. The analyses proceed by determining the benefits of regulations by an assessment of the risk that exist before and after the regulations. The benefits are then compared with the economic impact of the regulations. Analysis experience to date:

- Preliminary and final SEIA preparation for proposed PCB Regulations No. 2 (product) and No. 3 (release).
- Plan for SEIA on the Environmental Code of Good Practice for steam-electric power generation.

LESLIE JOHNSTON

- Plan for SEIA on the revised effluent regulations for the pulp and paper industry.
- Component studies (hazard assessment and spill response) for transport regulations. Identification of hazardous waste shipments and potential environmental impact if spilled during transport.

Soil Sampling and Analysis - CN Convention Centre, Toronto. Assisted in project to collect and analyze soils from site excavation for the CN Convention Centre. Provided interpretation of results and worked with client and Ontario Environment to resolve disposal problem. CNR.

Investigation of Phosphate Ester Lubricant use and environmental fate for a large natural gas transmission company. Provided technical background to assessment of extent of contamination by triaryl phosphate lubricants including review of soil analysis and description of the probable environmental fate.

Countermeasures Equipment, Materials and Systems. Assisted in review and cataloguing of equipment materials and systems available to mitigate the effect of spill of chemicals.

Occupational Health Requirements for pesticide package plant. Reviewed chemical hazards and coordinated engineering recommendations to prevent worker intoxication from pesticides.

Technical Information for Problem Spills. Provided assistance on chemical compatibility aspects of chemicals spilled in the environment. Provided senior review of manuals prepared to cover the 50 most likely chemicals to be involved in a spill.

Information Dossiers. Coordinated collection and tabulation of environmentally significant data on chemicals and industrial chemical operations. Environment Canada.

Feasibility Study on Application of Plasma Arc Technology to Coal Gasification. Provided independent technical review of test data for assessment of operating characteristics of the technology.

TECHNICAL PAPERS

"Polarography and Coulemetry of Rhodium (III) in a Pyridine-Pyridinium Chloride Electrolyte", Can J. Chem. 1968.

"Electrochemistry of Rhodium (III) in Ammoniacal Medium", Can. J. Chem. 1969.

LESLIE JOHNSTON

"Determination of Hydrogen Sulfide in a Heavy Water Plant Outfall by Cathodic Stripping Voltammetry", Mid-Atlantic Regional Meeting of American Chemical Society, Baltimore, February 1976.

"PCB Destruction", Hazardous Wastes in Atlantic Canada: Type, Distribution, Disposal and Toxicology, Chemical Institute of Canada, Wolfville, Nova Scotia, August 1982.

A Program to Introduce Site-Specific Chlorination Regimes at Ontario Hydro Generating Stations, Water Chlorination, Environmental Impact and Health Effects Volume 2, R.L. Jolley et al. editors, Ann Arbor Science Publishers.

Decontamination and Disposal of PCB Wastes, International Workshop on Occupational Hazards Caused by PCBs and Chlorobenzenes in Capacitors and Transformers, Hanasaari Cultural Center, Espoo, Finland, 21 September 1983.

Risk Assessment and the Production of Socio-Economic Impact Analysis, 33rd Canadian Chemical Engineering Conference, Toronto, 2 October 1983.

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