

Canadian Technology Human Resources Board Bureau canadien des ressources humaines en technologie

First Meeting of the Revision Committee on National Standards for Applied Science and Engineering Technologists

> Edmonton Downtown Hilton Edmonton, Alberta November 8-9, 1996

DRAFT AGENDA

1.	Welcome - Call to order	Denis Dubois - CTHRB Art Voth - HRDC	10 min.
2.	Introduction of Members	All	30 min.
3.	Appointment of Chair	All	10 min.
4.	Chair's Opening Remarks	Chair	15 min.
5.	Approval of Agenda	All	10 min.
6.	Appointment of Secretary/Treasurer	All	5 min.
7.	Approval of Working Group Members	All	20 min.
8.	Project Overview	Bill Allen Michael Brennan	1 hr.
9.	Project Title	Chair	
10.	Project Budget	Michael Brennan	30 min.
11.	Terms of Reference	All	30 min.
12.	Long Term Revision Process	All	1 hr.
13.	Accreditation, Certification and Licensing Issues	All	1 hr.
14.	Format of Final Product	All	1 hr.
15.	Other Business	All	
16.	Date of Next Meeting	All	

Technologist Standards Instructions for Agenda Items Friday, November 8, 1996

Welcome - Call to Order The meeting will begin at 8:30 a.m. at the Downtown Edmonton Hilton. Denis Dubois, Chair of the Canadian Technology Human Resources Board and Art Voth of Human Resources Development Canada will open the meeting.

2. Introduction of Members Each member of the Committee will be asked to introduce themselves and the association or organization they represent.

3. Appointment of Chair The CTHRB has endorsed Mr. H. Norman Socha's nomination for Committee chair. Enclosed please find his resumé, along with further information.

4. Approval of Working Group Members

The Working Group is being contracted by the full Committee to undertake the development of the revised Technologist Standards. Enclosed please find resumés for each member. The Committee will be asked to approve nominations and contracts.

5. Project Overview Enclosed is a copy of the Project Overview. Mr. Allen and Mr. Brennan will give a brief presentation at the meeting. Following the presentation the full Committee will discuss the project and determine a plan of action.

6. Project Title

The Committee is asked to determine the project and committee name, to be used for correspondence and contracts.

7. Project Budget

Attached with the project overview is a copy of the proposed budget. The budget will be modified to reflect the final project plan.

8. Terms of Reference

Included is a copy of the draft Committee Terms of Reference. The Terms of Reference will act as a guideline in evaluating the actions of the Committee.

9. Long Term Revision Process

As part of the project, the Committee is asked to develop a long term process for continuous revision and refinement of the Technologist Standards. Please come prepared to discuss this issue.

10. Accreditation, Certification and Licensing Issues

The development of standards impacts on these issues. Please come prepared to discuss.

11. Format of Final Product

The Standards can be published in several formats, including hard bound, CD-ROM, via the Internet, etc. The Committee will determine the best choice based on cost and accessibility.

H. NORMAN SOCHA, CET

78 Euclid Avenue, Waterloo, Ontario Canada N2L 1Z4 (519) 744-6740

EDUCATION

Rverson Institute of Technology,	Electrical Technologist.
Waterloo University College,	B.A., plus post graduate
	courses, Economics & Business.
University of Western Ontario,	Althouse College of Education,
	plus Masters degree courses in
	Computer Science.
State University of Iowa,	Quality Control by Statistical Methods: Operations Research.
State University of New York, Central Michigan University, Nova University, Florida,	Creative Problem Solving. MA Ed. College Administration. D Ed. (Candidate) Technical and Vocational.

EXPERIENCE

<u>Professor</u>, Conestoga College, Technician & Apprenticeship. <u>President</u>, Enook Galleries Ltd., Canadian Native Art. <u>Administrator</u>, Electrohome Ltd., Manager of Quality Control, Research and Development, Project Engineering, Training Depts.

<u>Project Engineer</u>, Application Engineering Dept., Electrohome Ltd. <u>Instrument Technician</u>, <u>Industrial Electrician</u>, Dofasco Canada. <u>Teacher</u>, Waterloo County Board of Education, Technical Dept. <u>Lecturer/Facilitator</u>, Creative Education Foundation, S.U.N.Y. Buffalo.

PROFESSIONAL

Trustee,	Carole & George Fletcher Foundation, OACETT.
Colleaque,	Creative Education Foundation, State of New York.
Consultant,	Board of Examiners, Ontario Association of Certified
	Engineering Technicians and Technologists.
Member,	International Creativity Network, Buffalo State
	College.
Board of Dir	ectors, Canadian Creativity Network Foundation.
Senior Membe	er, Society of Manufacturing Engineers.
Member,	Amercian Society for Quality Control.
Member,	Ontario Electric League, Waterloo Region.

PUBLICATIONS

"Creativity and the Technologist", <u>The Ontario Technologist</u>, cover story,(1992, November).

"Creative Problem Solving Can Ensure Corporate Survival", <u>The KW</u> <u>RECORD</u>, (1992).

(over)

"Our Apprenticeship System Needs to Change With The Times", <u>Electrical Business</u>, (1992, June) .

"Women Prosper in New Programs", The Globe and Mail, (1992).

"Revamp Education, Canadian Industry Needs Well-trained Technical Workers", <u>The KW Record</u>, (1993, February).

"Soft Savings of Electricity", <u>The Ontario Technologist</u>, cover story, (1993, September).

<u>OTHER</u>

Past President, Grand Valley Chapter of OACETT. Founding Member of College Council at Conestoga. Waterloo Visitor and Convention Bureau Member. Private pilot. Industrial Electrician 442A. Co-Founder of the Kitchener Judo Club. International lecturer on creative problem solving techniques Recipient of the Aubrey Hagar Distinguished Teaching Award, 1993 Committee member of the Aga Khan Foundation Partnership Walk. Volunteer member for United Way. Member of Ontario Government Sectoral Skills Committee for the AMER (automated equipment repair and maintenance program). Cited in Governance Report from Council of Regents to Minister of Education and Training for Ontario (Nov, 1994). Submission to Royal Commission on Learning (Feb, 1994). Who's Who in Ontario (1995).

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> ing, swimming, reading, attending symphony concerts, movies and theatre. ◆Canada 125 Medal, 1993.)Mr. Michael Sobota immigrated to Canada on September 29, 1969 and became a full citizen on May 30, 1985. He has served as an expert advisor on AIDS to four Ontario Ministers of Health in different governments.

Socha, Henry Norman: President. Born in Hamilton. ON, November 7, 1936, to Adam and Mary (nee Nosek) Socha. Attended Ryerson Institute of Technology (Toronto) in 1959, graduated from Wilfred Laurier University (Waterloo. ON) in 1963 with a BA degree, and received a MA degree from Central Michigan University in 1992. • Supervisor of Engineering with Electrohome Ltd. in Kitchener from 1961-66; Teacher with Waterloo County Board of Education in Waterloo from 1966-78; President of Inukshuk Galleries Inc. from 1968-80; President of Enook Galleries Inc. in Waterloo since 1980; and Professor with Conestoga College in Kitchener since 1986. Mr. Socha has two children: Douglas David and Patricia Anne Marie. Business address: 29 Young Street East, Box 335, Waterloo ON N2J 4A4 Ph: (519) 884-3221/(519) 744-6740 Contario Association of Certified Technicians & Technologists; American Society of Manufacturing Engineers: American Society of Quality Control; Creative Education Foundation; Canadian Creativity Network; College Academic Council, Conestoga College. Publications: "Creativity and the Technologist," The Ontario Technologist, 1992; "Creative Problem Solving Can Ensure Corporate Survival." The KW Record, 1992; "Our Apprenticeship System Needs to Change with the Times," Electrical Business, 1992; "Women Prosper in New Programs," the Globe and Mail, 1992; "Revamp Education, Canadian Industry Needs Welltrained Technical Workers," The KW Record, 1993; "Soft Savings of Electricity," The Ontario Technologist, 1993. ▲Waterloo Visitor and Convention Bureau; United Way; Aga Khan Foundation; Kitchener Judo Club; Y's Mens Club. ▼Judo, flying and fishing. ♦Aubrey Hagar Award, 1993.)Mr. Norman Socha's father, Adam, immigrated to Canada from Poland in the 1920s. Norman teaches courses on how to solve problems using one's imagination, creativity and applying "Future Pull" to industry and education.

Söderholm. Leif Helmer Alfred: Marine Contractor. Born in Lappträsk, Finland, August 5, 1952, to Helmer and Anna-Lisa (nee Rosquist) Söderholm. Graduated from high school in Campbell River, BC in 1969, and received a commercial diving diploma from North Western School of Deep Sea Diving (Burnaby) in 1971. ODiver with Master Diving Services in Toronto, ON from 1972-74; Young & Forbes Diving & Marine from 1974-78; General Manager of Young-Söderholm Diving & Marine in Oakville from 1978-84; and President of Söderholm Maritime Services Inc. in Hamilton since 1984. Business address: PO Box 95, LCD 1, Hamilton ON L8L 7V7 Ph: (905) 529-1344 Wentworth Condominium Corporation #9, Hamilton. ACanadian Institute of International Affairs; Burlington-Hamilton-Wentworth Big Brothers Association. ▼Travel, skating, walking and hiking.)Mr. Leif Söderholm's family emigrated from Finland to Thunder Bay, ON in 1958. His father was an unskilled labourer. He

learned a trade through correspondence and never looked back. Mr. Söderholm family moved to Campbell River in 1967. His family tends to be wanderers; his brother lives in San Francisco, CA, and his parents and sister live in BC. Moving to Canada was the best thing that happened to the Söderholm family.

Sodhi, Tirath Singh: Engineer. Born in Sodhian, India, June 14, 1947, to Mehnga and Karam (nee Thind) Sodhi. Received a BEE degree from G.N. Engineering College (Ludhiana) in 1971, and attended University of Calgary (AB) from 1978-79. •Electrical Engineer Trainee with Fertilizer Corporation of India in Punjab from 1971-72; Electrical Design Engineer with Lumus Canada in Toronto, ON from 1973-75; Montreal Engineering in Calgary from 1975-80; Electrical Instrumentation Engineer with Williams Brothers Limited from 1980-81; Electrical Engineer with Procor Sulphur Services from 1981-83; Senior Electrical Engineer with Syncrude and Suncor in Fort McMurray from 1984-90; and Department of National Defence in Ottawa since 1990. Married Harbhajan Jhuti on July 10, 1971. They have two children: Satvinder and Onkar S. (adopted). Business address: 101 Colonel By Drive, Ottawa ON K1A 0K2 Ph: (613) 945-7878 Professional Engineers Ontario; Geologists and Geophysicists of Alberta, ABarrhaven Tennis Club, Nepean. ▼Reading newspapers, magazines and books (particularly on economics). Athletic Award (Pole Vaulting).

Sokoloski, Mary Patricia: Pharmacist. Born in Espanola, ON, to Robert and Theresa (nee Gallagher) Donnelly. Attended Sacred Heart School (Espanola) until 1969, graduated from Espanola High School in 1974, and received a BSPharm from University of Toronto in 1979. Pharmacist with Robinson's Drug Store in Espanola from 1979-81; Janeway Pharmacy in Massey from 1981-83; Island IDA Pharmacy in Little Currennt from 1983-84; Mindemoya Pharmacy from 1984-85; Espanola IDA Pharmacy from 1985-86; and Director of Pharmacy at Manitoulin Health Centre in Little Current since 1986. Married David on May 8, 1982. They have two children: Sara Jane and James David. Business address: Manitoulin Health Centre, Little Current ON POP 1P0 Ph: (705) 368-2300 Ext 130 MOntario College of Pharmacists; Canadian Pharmaceutical Association; Ontario Pharmacist Association; Canadian Society of Hospital Pharmacists; American Society of Hospital Pharmacists. ▲Espanola Skating Club. ▼Skiing, swimming, reading and golf.

Soldan, Susan Anne: Superintendent of Business. Born in Fort William, ON, August 3, 1958, to Yozef and Anna (nee Haluschak) Soldan. Received a HBComm degree from Lakehead University (Thunder Bay) in 1981, completed CA at Canadian Institute of Chartered Accountants in 1984, and received a CIA designation from Institute of Internal Auditors (FL) in 1987. CA Student with Coopers & Lybrand in Edmonton, AB from 1981-82; Chartered Accountant with Thorne Riddell Chartered Accountants in Thunder Bay from 1982-85; Internal Audit Manager with Ontario Ministry of Natural Resources from 1985-88; Budgets & Planning Man-

▼ Recreation, Sports, Hobbies and Pastimes; ◆ Decorations, Awards and Honours;) Genealogical Comments

Instructor aims for quality

By Karen Neath

Enook—an Inuit word meaning human being, with no provisions for sex, age or tribe. Nothing better describes that which Norm Socha holds in high esteem.

This instructor at Conestoga College's Daniel B. Detweiler Centre bubbles with enthusiasm for his students, colleagues and all those he deals with.

"Aim for quality" is a motto by which he lives. And a value he teaches to his students.

Walter Boettger, another instructor at the Centre and a former student of Socha's (at Waterloo Collegiate in the 1970s), said Socha seemed "to be the most interested in the students."

Socha is not only involved with education in Canada, but he is a colleague of the Creative Education Foundation in New York state.

Once a year the international foundation holds week-long seminars where company executives, doctors and other professionals learn problem-solving techniques, and how to facilitate basic creativity within the person.

In addition to his educational pursuits, Socha owns an Inuit and native art gallery on Young Street in Waterloo. Enook Galleries Incorporated, established about 24 years ago, is renowned in native art circles. Socha has supplied the government with presentation gifts for visiting dignitaries such as the king of Belgium, the president of France, and Margaret Thatcher, the prime minister of Britain.

The gallery has a warm, homelike atmosphere. There used to be an apartment on the second floor where overnight visitors were welcome. Socha's friends, Canadian prima ballerina Veronica Tennant and husband John, often stayed in the apartment when Tennant performed at Stratford.

"It gave them a quiet weekend, away from the bustle of hotels," Socha said, "and they both love art."

The apartment is no longer there as the gallery has expanded to the second floor. Yet the warm, cozy atmosphere remains. This is why the gallery invites a host of customers from all over North America. Socha says art crosses many boundaries and many friends are made.

Socha is one of Canada's most knowledgeable authorities on this type of art. He often helps new artists get a break. He is humble about his deep knowledge of the incredible history and knowledge the native people have given to this country.

"My Siamese cat introduced me to native art," he explained. "He knocked over a stand of Eskimo prints. I took one look at them and ordered a whole bunch."

Socha's talents do not end there.

He is also a qualified examiner for the Ontario Association of Certified Engineering Technicians and Technologists (OASAT) and he is on the Conestoga College Academic Council.

His students show an obvious admiration for the man, and he receives as much as he gives.

"We don't have a play attitude," he said. "We have a fun attitude."

In his day, Socha, too, was a hard-working student who studied all three programs: business, commercial and technical, offered at a north Hamilton school that has since been torn down. He would write up to 15 exams. He said he and the few others who were similarly enrolled were often outcasts at school because no one knew where they fit in.

One of his teachers told the class every day they would never amount to anything. The students had the last laugh at a reunion several years later. The same teacher learned that every one of those students had graduated from post-secondary institutions.

"He just sat at the head table with his mouth open," Socha said, laughing. "He was completely flabbergasted."

It is amazing what incredible minds can do, especially those who had a wine-still set up in their chemistry class without ever being found out, all of those incredible minds, including Norm Socha's.

Professional Development

Creativity a powerful tool in problem-solving — Technologists can lead the way

By H. Norman Socha, CET



T echnologists must become more creative if they are to meet the new demands of technical change. The economic changes imposed by international climates are challenging many corporations to the limit. Those that identify and use the creative capabilities of their human resources can meet these challenges, survive and grow.

In this arena, technologists can shine — for they are informed in both theoretical and practical spheres. More important, they are exposed to many opportunities to combine their talents. Technologists should be aware of their creative abilities; if they are trained to utilize their thinking power more effectively, a whole new field of endeavour will open.

Technologists are informed in both theoretical and practical spheres All problem-solving follows some process. There are many variations, called by many names. The seven steps used by the Creative Education Foundation had their beginnings in the mid 50's, with Alex Osborn and Dr. Sidney Parnes. Prior to that, the late Dr. J.P. Guilford — in "Creativity," his 1950 inaugural address to the American Psychological Association — inspired a mass of research into this area. During the next decade, there were more articles and research in this field than there had been in the previous 23 years.

We talk about giftedness, originality and genius, but in essence we mean mental power or faculties. To exercise these powers, it is necessary to know them and to have the opportunity to use them. The technologist is in one of the best positions to achieve this.

The steps are quite simple. First you have the "mess" — consisting of facts, feelings, situations and, to some degree, confusion. Second is "factfinding" — a process during which you ask questions to gain more facts. With as many facts and data as possible, you then proceed to the third step, "problem-finding."

Statements of specific problems can be created, based on your data. This leads into the next area that elicits the real thinking exercises: "idea-finding." At this stage, you use such techniques as "brainstorming" or "story-boarding" to generate as many ideas as possible. Judgement is ruled out, so you produce ideas even if they appear



Fortune 500 lists "creative-problem-solving" as one of the main attributes required by successful employees

ridiculous. This requires some instruction and experience, for it is here that a lot of harm has been done by incorrect attempts. If certain procedures are not followed, you do not accomplish much. In most cases, you go through the motions, get inconsistent results, and become disenchanted.

Creating a lot of ideas is not the only answer. What good are ideas if you do not use them? The next step, "solution-finding," repeats the previous steps, while geared to solutions. You need solutions to make your ideas work.

The final step is "acceptance-finding" or, as I say, implementation. It is extremely important to implement an idea effectively and efficiently to complete the process. You must complete the cycle if the process is to work. You cannot leave it partially completed and expect results. There should be as much time and effort given to implementation as to all the previous procedures.

The technologist is in a somewhat enviable position to obtain many of the facts, to be aware of the various problems, and to become sensitive to the individual and total needs. Thus can the technologist elicit many of the ideas that could be used to solve the problem.

Many corporations are reducing the middle-management function and are relying more on individual input from others in the organization. The Fortune 500 club in the United States lists "creative-problem-solving" as one of the main attributes required by successful employees. The technologist can exercise this opportunity.

Creativity is not restricted to the artist or writer, but rather is applied on a daily basis to job situations. The strategies used for awakening this need result in a very powerful person within the corporation. Application of the process will start off slowly, but once it gains momentum, the technologist will blossom. The power of the mind and the control of this power create a very challenging career. Technologists have the opportunity, capability and fortune to utilize their inner power.



Norman Socha is president of Enook Galleries Inc., of Waterloo. and a professor in electrical theory and effective *communications* at Conestoga College, Kitchener. A graduate of Ryerson Institute of Technology (now Ringson Polytechnical Institute), Mr. Socha also completed graduate

studies at Waterloo University College and the University of Western Ontario. In addition, he has undertaken advanced studies at Althouse College of Education, Iowa State University, and State University of New York at Buifalo. Mr. Socha is presently completing graduate work in college administration at Central Michigan University. He is a Colleague of the Creative Education Foundation in the State of New York, an organization which encourages creative proclem-solving skills for industry and education.

A member of the College Academic Council at Conestoga College, and of OACETT's Board of Examiners, Mr. Socha has an extensive background in industry and education. He seeks to help the educational system meet the demands of the next century.

CERTIFIED TECHNOLOGISTS Become a Professional Engineer by completing the academic requirements at the Department of Surveying Engineering University of New Brunswick

The Department of Surveying Engineering offers the degree of Bachelor of Science in Engineering (Surveying). Successful completion of specific engineering courses at technological institutions enables students to enter the University with advanced credits. Applicants are evaluated on an individual basis.

Specializing in engineering and mining surveying can lead to employment on such megaprojects as the Superconducting Super Collider in Texas and the offshore positioning and tunnelling for the Boston Harbour project. Geodetic surveyors, or geodesists, using special geodetic techniques like GPS, provide basic geographic reference points on the earth's surface which provide a framework of control for all other surveying, mapping, and engineering projects requiring high positional accuracy. Our mapping sciences programme combines photogrammetry, remote sensing, cartography, and geographic information systems, to support and promote the effective stewardship of our earth resources. Hydrographic surveyors and the Ocean Mapping Group explore ways to map the sea bed and investigate new approaches to the editing, presentation, and extraction of information from ocean mapping data.

The B.Sc.E. programme is accredited by the Canadian Engineering Accreditation Board and provides the academic background for provincial registration as a professional engineer, commissioned land surveyor, and certified hydrographer. The Department's Cadastral Surveying Option has been accredited by the Canadian Council of Land Surveyors. Our Certificate of Academic Proficiency in Hydrographic Surveying is recognized by the International Hydrographic Organization and the International Federation of Surveyors as meeting their "Academic Category A" standards.

Contact: Chairman Department of Surveying Engineering P.O. Box 4400 University of New Brunswick Fredericton, N.B., E3B 5A3

Phone: (506) 453-4698; Fax: (506) 453-4943

RESUME

RONALD NEAL ISAAK

PERSONAL DATA

Home address: 4709 Birchwood Place, Burnaby, B.C., V5G 4E4

 Telephone:
 Home (604) 432-6173
 Business (604) 432-8234

 Fax:
 (604) 432-9572)
 Internet:
 RISAAK@BCIT.BC.CA

Marital status:Married Dependents: 0Birth date:April 16, 1947

REFERENCES References available upon request.

PUBLICATIONS See attachment

EDUCATION

Master of Distance Education (in progress)Deakin University (Australia, 1996)Bachelor of ScienceEastern Oregon State (1991)Bachelor of ArtsOpen University (B.C.) (1990)Business Administration Program StudiesBCIT (1969 - 1974)Diploma of Technology, (Civil)BCIT (1968)

CURRENT POSITION

Assistant Director, (1990 -) British Columbia Institute of Technology School of Engineering Technology, Part time Studies, Distance Education and Industry Training

Responsible for engineering technology distance education and industry training including: proposal development for private and public sector training development and delivery projects; project management; financial management and client liaison. Annual project value ranging from \$300K to \$750K. Current major projects: Vegetation Inventory Training Project (\$500K); Forest Engineering Technology Distance education project (\$100K annual over 5 years); and BC Parks Facility Maintenance Inspection Distance Education Program (\$80K). Annual enrollments exceed 1000 for distance education and 5000 for industry in-service training courses delivered in conjunction with other agencies.

RECENT CAREER HISTORY

Program Coordinator, Program Head (1985 - 1990) Transportation Systems (Distance Education) Technology, British Columbia Institute of Technology

Responsible for development of a Diploma of Technology distance education program including development of curriculum, departmental policies & procedures, long & short term department

objectives and information systems. Initiation of a distance education delivery system including of program admissions, transfer credit, placement and support systems and procedures. Management of course development contracts, coordination of distance education course development for over 90 courses including liaison with Government Ministries and Industry, departmental administration, and staff supervision and budget preparation and control.

Sales and Marketing Representative (1983-1984) Tri-Power Industries Ltd., Surrey, British Columbia

Responsibilities included: preparation of feasibility studies; oral proposal presentation to approval authorities; preparation of land and housing sales contracts; and liaison between clients, developers and contractors.

President and Manager (1979 - 1983) Emerald Investments Ltd., Delta, British Columbia

Responsibilities included: corporate administration and management; negotiation for land assembly and development proposals; preparation of feasibility studies; negotiation and preparation of contracts; and coordination and management of development projects.

Partner and Manager (1974 - 1979) Cameron Surveying and Engineering Ltd., Surrey, British Columbia

Responsibilities included: corporate financial and administrative management; personnel management and supervision; preparation of fee-for-service proposals; preparation of production and work schedules; preparation of service and construction contracts; and all functions related to the management of 30 employees.

CONCURRENT RELATED ACTIVITIES

Instructor/Tutor (1973 -.....) British Columbia Institute of Technology Burnaby, British Columbia

Full-time (temporary), guest, continuing education instruction and distance education tutor for a variety of Civil Engineering Technology subjects.

Technical Consultant (1982) Directed Studies Department British Columbia Institute of Technology

Evaluation of program curriculum, policy and procedures, and assessment of distance education needs for Ministry of Transportation and Highways employee training. Resulting report led to the formation of Transportation Systems Technology distance educat ion initiative at BCIT.

ORGANIZATIONAL AND LEADERSHIP ROLES

Member	National Committee (1994-95)
	Standards for Applied Science and Engineering Technicians

Member National Committee (1993-94) Standards for Applied Science and Engineering Technologists

Negotiator	Canadian Representative (1993) NAFTA CCTT-NICET Technologist Reciprocity Hearings
Assessor	Foreign Academic Qualification Assessor (1991-92) CCTT-Canadian Employment and Immigration Commission
Chairman	Canadian Technology Accreditation Board (1986-90) Canadian Council of Technologists and Technicians, Ottawa, Ontario
Chairman	Experiential Learning Credit Committee (1987-92) British Columbia Institute of Technology, Burnaby, British Columbia
Board Member	Provincial Accreditation Board, (1976-94) Applied Science Technologists and Technicians of B C
Panel Member	Panel of Examiners, (1980-) Applied Science Technologists and Technicians of B C
Chairman	Board of Governors, (1976-77) British Columbia Institute of Technology
President	Alumni Association, (1976-77) British Columbia Institute of Technology
Chairman	Continuing Education Student Advisory Committee, (1968-70) British Columbia Institute of Technology

PUBLICATIONS

Isaak, R. N. (1978). `Establishing raw land values for development properties.' IC&I Profile, Westminster County Real Estate Board, Fall, Surrey, pp. 33-41.

Isaak, R. N. (1984). `Hydrology part 1: introduction to hydrology.' BCIT distance education course manual, MoTH Printery, Victoria.

Isaak, R. N. (1984). 'Hydrology part 2: flood flow determination.' BCIT distance education course manual, MoTH Printery, Victoria.

Isaak, R. N. (1985). 'Hydrology part 3: rational method application.' BCIT distance education course manual, MoTH Printery, Victoria.

Isaak, R. N. (ed.) (1985). 'Surveying part 1: basic instrumentation.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (ed.) (1985). 'Surveying part 2: methods and procedures.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (ed.) (1985). 'Surveying part 4: field applications.' BCIT distance education course manual, BCIT Print Services, Burnaby.

Isaak, R. N. (1986). `Concrete technology part 1: basic properties.' BCIT distance education course manual, MoTH Printery, Victoria.,

Isaak, R. N. (1986). `Concrete technology part 2: mix design.' BCIT distance education course manual, MoTH Printery, Victoria.

Isaak, R. N. (1986). `Concrete technology part 3: placing.' BCIT distance education course manual, MoTH Printery, Victoria.

Isaak, R. N. (1986). `Concrete technology part 4: testing practices.' BCIT distance education course manual, BCIT Print Services, Burnaby.

Isaak, R. N. (1987). `Surveying highways part 1: horizontal alignment.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1987). 'Surveying highways part 2: vertical alignment.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1987). `Surveying highways part 3: field applications' BCIT distance education course manual, BCIT Print Services, Burnaby

Isaak, R. N. (1987). `The legal surveying system.' BCIT distance education course manual, BCIT Print Services, Burnaby

Isaak, R. N. (1988). 'Highway construction part 1: clearing and excavating.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1988). 'Highway construction part 2: earthmoving.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1988). 'Highway construction part 3: compaction and stabilization.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1988). 'Highway construction part 4: culverts and drainage.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. & Oliver, M. (1988). `Highway construction part 5: rock drilling and blasting.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1988). `Estimating: quantity take-off.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1988). `Estimating: costing.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1989). `Subdivision planning & design: land use planning.' BCIT distance education course manual, MoTH Printery, Victoria

Isaak, R. N. (1992). `Fundamentals of hydrology; a reference guide for the engineering technologies.' 4th Edition, Info-Tech Enterprises, Burnaby.

Boyle, J. M. & Isaak, R. N. (1994). 'Highway design part 1: basic design data.' BCIT distance education course manual, BCIT Print Services, Burnaby

Cunnington, P. & Isaak, R. N. (1994) Subdivision planning & design: urban street design.' 'BCIT distance education course manual, BCIT Print Services, Burnaby.

Heineken, M. & Isaak, R. N. (eds.) (1994).. `National standards for civil technologists.' Canadian Technology Human Resources Board, Ottawa.

Isaak, R. N. (ed.) (1994). `National standards for forest resource technologists.' Canadian Technology Human Resources Board, Ottawa.

Isaak, R. N. (ed.) (1995). `National standards for forest resource technicians.' Canadian Technology Human Resources Board, Ottawa.

Resumé

W.D. (Bill) Allen

Diplomas in Water Resources Engineering Technology and Electronic Operations Technology, a Degree in Education and several University and Industrial courses prepared Mr. Allen for his career in technology. Over the past 20 years he has gained curriculum development and instructional experience in industrial, extension and technology courses using traditional, modular and competency based educational approaches. This includes training heavy equipment operators, water well contractors, water and sewage treatment plant operators and technology students mainly in Civil, Water Resources, and Environmental Engineering Technology.

He has been actively involved with community and industry groups including the Saskatchewan Applied Science Technologists and Technicians (SASTT), the Canadian Council of Technicians and Technologists (CCTT), the Water Studies Institute, the City of Moose Jaw Municipal Advisory Committee on the Environment, the Western Canada Water and Sewage Conference, the Saskatchewan Water and Waste Association, the Saskatchewan Environmental Managers Association, the Wakamow Advisory Committee, the Committee on National Standards for Applied Science and Engineering Technologists and the Canadian Technology Accreditation Board (CTAB).

He represented the CCTT on the Steering Committee for "Human Resource Study of the Environment Industry", a Canada wide study funded by Employment and Immigration Canada, and the National Advisory panel for the Canadian Council for Human Resources in the Environment Industry National Occupational Standards - Environmental Protection Technicians and Technologists - development project.

He was a member of the City of Moose Jaw/City of Belize exchange team that travelled to Belize to recommend human resource development for the City of Belize. He was also an "Observer" on the original Tecnologist Standards project, and the Working Group Co-ordinator for the recent Technician Standards project.

Mr. Allen is currently the Western Regional Representative for CTAB, a Member of the Board of Directors of the Canadian Technology Human Resources Board, and the Past Chair of the SASTT Certification Board. His industry involvement, and especially his work with SASTT and CCTT, has given Mr. Allen a unique perspective and background relating to education and training, certification and accreditation.

Over the past 16 years he has also gained valuable management experience through his work with SASTT, as Program Head of the Civil, Water Resources, and Environmental Engineering Technology programs, and as the Manager of the SIAST Restructuring, Accreditation, Clustering and Coring (RACC) Project. The RACC Project was a SIAST wide special project established to verify the curriculum of the engineering/applied science technician and technology programs, recommend restructuring to provide greater flexibility and credit transferability between programs, and obtain national accreditation of all programs meeting national standards.

RESUME of LORNE RONALD FARRELL, CET

ADDRESS:

161 Highland Drive St. John's, NF. A1A 3C6 Telephone: 709-576-4655(home) Telephone: 709-758-7122 (work) Fax: 709-758-7126 (work) EMAIL: LFarrell@Admin.Cabot.NF.CA

EDUCATION AND TRAINING:

1970	Diploma in Electronics Technology. College of Trades and		
1007	Technology.		
1987	Newfoundland, Specialisation Major in Computer Science.		
1992	Completed up to Term 6 of a Degree in Computer Engineering from		
	Memorial University. Two terms left to complete.		
1994	Completed Computer Science (MSc) courses by distance learning from		
	American Institute for Computer Sciences.		
1996	Recently completed courses in Advanced Technology		
	Marketing Strategies and Human Resource Management.		

During my employment with Cabot, I have also completed courses from Learning Tree, Motorola and Memorial University Continuing Education. These training courses included: Artificial Intelligence and Expert Systems, Digital Signal Processing, Data Communications & Networks, Microprocessor Development, Object Oriented Programming, Networking, Database Systems, and Biomedical Engineering I have also completed the Total Quality Management orientation seminars at Cabot.

PROFESSIONAL EXPERIENCE:

1983 - Present: Cabot College of Applied Arts, Technology & Continuing Education

Position:

Currently, Co-ordinator of Electronics, Computer and Information Technology programs at Cabot College. Responsibilities include: course and program supervision of 27 Academic and Technical Instructors; supervision of associated clerical and administrative personnel; scheduling courses for Technical Programs; development of workload allocations for instructors; development and administration of program operating and capital budgets of approximately \$1,500,000; development of proposals to seek funding for new or current programs; interfacing and negotiating with corporate

partners or clients on joint initiatives; arranging contract training programs; working with Advisory Committees; and submission of accreditation documentation for programs.

Prior to this position I was seconded by the Ministry of Education to serve as Chair of the Provincial Standing Committee on Technology. In this position, I was required to review, develop and articulate all Engineering and Applied Science Technician and Technology programs within the provincial college system; to prepare all programs for National Accreditation, and to establish a vision of how technical education should be implemented within the province. This involved: project management; development and administration of operating budgets; arranging and scheduling meetings; maintenance of Committee minutes; development and delivery of presentations to College Staff, Administration, Government Education Officials and Ministers; and arranging Technical Conferences. As a final outcome of this work, I prepared a comprehensive action report for the Minister, titled "Towards Coherence", which laid out the framework for the future of technical education in the province.

Significant achievements include:

- the complete restructuring and re-development of Engineering Technician and Technology, and Natural Resource technical programs throughout the province of Newfoundland. This included the development of a menu of courses for all technical programs, and a process of articulation of these courses with Memorial University, and other Universities. This has lead to the establishment of significant university/college course transfer credits with Lakehead, UNB, MUN, etc.
- development of innovative computer and electronics programs which are widely recognised within the country.
- successful integration of new faculty and staff from transferred programs (from the Marine Institute) into Cabot's Electronics/Computer department.
- development of an Advanced Diploma program leading to a Bachelors degree in Technology.
- establishment of continuing education programs for industry and professional societies running parallel with traditional regular day-time and evening programs.
- re-structuring of Newfoundland's secondary education system towards one that is outcomes based, and which includes a fundamental math, science, communications skills and technology literacy core.

1973 - 1983: Newfoundland Telephone Company Ltd.

Position:

Engineering Associate-Manager. Worked in a variety of Engineering and Supervisory positions, involved with the planning, design and project management of audio, video, data, satellite and supervisory control telecommunications systems. Significant projects include the planning, design and project administration of: the Cross-Island, and Labrador microwave communications systems; the Allandale Data Communications facilities; the Supervision and Control System for Telecommunications radio and switching sites.

During, my last three years with Newfoundland Telephone I was responsible for performance audits of telecommunication facilities. This included supervision of staff; project management; operating and capital budgeting; and interfacing with major telecommunications customers to resolve service complaints.

1970 - 1973: Ministry of Transport.

Position: Electronic Technician/Technologist.

Supervised the maintenance and operations of Marine Communications and Radar Equipment.

PROFESSIONAL ACTIVITIES:

- Certified as an Engineering Technologist by the Association of Engineering Technicians and Technologists of Newfoundland (AETTN).
- Senior member of the AETTN Registration Board with responsibilities to review applications for certification as an Engineering or Applied Science Technician or Technologist. Also a member of the Technical Education Committee with responsibilities to review applications from mature candidates who may not have attained the required educational training for membership through formal means.
- AETTN representative on the negotiating committee to develop an MOU with the Professional Engineers of Newfoundland. The purpose of this committee is to reach a common understanding between Engineering Technicians/Technologists and Engineers, and to establish a framework for a joint ACT governing both professional associations.
- Chair of the Canadian Technology Accreditation Board (CTAB) with responsibilities to accredit
 public/private, and Military, post-secondary technical programs in Canada; and to, develop
 reciprocal transferability agreements with other international technical associations. While in this
 position, I successfully guided CTAB towards the status and recognition it now receives within the
 College Community.
- Ex-Officio member of the CCTT Executive Committee with responsibilities for strategic and operational planning, budgeting, and maintaining positive relations with the Constituent members of the CCTT.
- Representative on the Committee on National Standards for Applied Science and Engineering Technology and Technician programs.
- Co-ordinated the development of National Technology Standards for the Mechanical discipline cluster and National Technician Standards for the Electrical/Electronics discipline cluster.
- Served as a working group member of Memorial University's, Ocean Studies Task Force on "Integrated Communications and Management Information Systems".
- Member, since 1994, of the Provincial Foundation Program Working Group. The purpose of this group is to identify the transition level outcomes for students at the end of primary, elementary, intermediate and senior high and to establish a core curriculum that would be common to all students in the province. This group reported to the Deputy Minister of Education and set the outcome framework for educational reform within Newfoundland's secondary education system.

RESEARCH INTERESTS & ACTIVITIES: CURRENT:

- Presently developing a procedure to quantify and qualify the acoustical signature of "brand-name" acoustic guitars using a digital signal processing board, running under LABView. A second stage of this research is to evaluate the construction materials and practices which produces the acoustical signature of these guitars. The intent of this research is to assist a Newfoundland Manufacture to produce acoustical guitars superior to brand-name guitars now dominant in the market-place.
- Developing a Windows-based (using Paradox and Object-Pal) Application-Database of Competencies for the Canadian Technology Human Resources Board. This database will be used to distribute occupational competency profiles to industry and colleges, to facilitate prior learning assessments of workers, and to conduct training needs analysis.

Developing Multimedia course-ware for Electronics programs.

PAST:

- Designed and Developed a Peripheral Vision Tester. The purpose of this instrument was to evaluate the reaction time of individuals in the visual field.
- Audio/Radio Studio Design for VOAR. VOAR is an independent radio station in Newfoundland which relies largely on volunteers for its technical support.

REFERENCES:

References are available upon request.

Dr. Peter Fisher

Curriculum Vitae

Home Address:	629 Topsail Road, St. John's, Newfoundland, AIE 2E1, Canada.
Home Telephone:	(709) 364 7802

PRESENT EMPLOYMENT

Employer:	The Fisheries and Marine Institute of The Memorial University of Newfoundland,
	P.O. Box 4920, St. John's, Newfoundland, A1C 5R3, Canada
Position:	Director, Division of Instructional Development and Student Services.
Office Telephone:	(709) 778 0356;
Office Fax:	(709) 778 0394;
email:	pfisher @ glil.ifmt.nf.va

EDUCATION

Date	Name of Institution	Discipline	Degree or Certificate	Year
1961 65	Queen Mary College, London University, England.	Chemistry	B.Sc.(Hons)	1965
1965 — 66	Institute of Education, London University, England.	Education	P.G.C.E.	1966
1967 — 69	Institute of Education, London University, England.	Education (Philosophy, Administration)	Academic Diploma	1969
1970 - 73	Memorial University of Nfld. St. John's, Nfld.	Education (Administration)	M.Ed.	1973
1977 – 79	The University of Leeds, England.	Education (History Administration)	Ph.D.	1980

GRADUATE THESES

M.Ed. Degree:

Report of an Internship with the Chief Superintendent of Schools, Department of Education, Government of Newfoundland and Labrador, September through December 1972.

 Supervisors:
 Dr. J. L. Jesse, Director, Labor Education and Research Service, Ohio State University,

 Dr. R. Fisher, Dean of Graduate Studies, Valdosta State University.

Ph.D. Degree:

:

The Influence of the Association of Education Committees upon the Development of Secondary School Examinations in England, 1943 – 1964.

Supervisor: Professor P. 1). J. H. Gosden, The University of Leeds.

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Peter Fisher CV

EMPLOYMENT EXPERIENCE

Date	Employer	Type of Appointment
1967 — 1970	Inner London Education Authority, U.K.	Chemistry Teacher, subsequently Senior Chemistry Master and Head of Chemistry Dopartment, Hackney Downs Grammar School.
1969 — 1970	Chelsea Collge of Science and Technology	Part-time tutor, PGCE teacher training program for science graduates.
1970 — 1987	Memorial University of Newfoundland	Lecturer in chemistry, Division of Junior Studies; Assistant Professor, 1974; Tenure, 1975; Associate Professor, 1976. Coordinator of Chemistry, 1975 – 1977; 1983 – 1984. Joint appointment with Institute for Educational Research and Development (I.E.R.D.), 1983 – 1987
1987	Career Development and Advanced Studics, Government of Newfoundland and Labrador	Special Advisor to Deputy Minister
1988 — 1994	Marine Institute	Curriculum Design and Evaluation Specialist, 1988 – 1994. Director, Division of Instructional Development and Student Services, 1994 – present.

EMPLOYMENT DUTTES (1985 - 1996)

Date	Primary Duties
1985 — 1986	First-year chemistry teaching Educational research with I.L.R.D., Faculty of Education.
1987	Responsibility for the introduction of the first-year university program into the Provincial community college system; responsibility for college science laboratory layout design and equipment provision; provision of Departmental liaison between CEIC and the colleges/institutes concerning seat purchase.
1988 — 1994	Director of program development projects in engineering technology, marine transportation and food technology; development of generic first year program; implementation of "common first year" program; tedevelopment of all three year programs; national accreditation of engineering technology programs; extension of "common first year" to Provincial college system.
1994 - Present	Responsibility for Academic Quality Assurance, Curriculum Development, Faculty Evaluation and Professional Development, Student Help Centre, Learning Technology Development and Computer Support, Library Services, Program Accreditation, Student Placement, Registration, Student Affairs.

OTHER ACTIVITIES

Date	Activities
1985 - 1989	Member of author team writing a high school chemistry textbook for Addison-Wesley
1988 - 1990	Educational research as Adjunct Professor, Faculty of Education, Memorial University
1988 - 1991	Consultancy : Department of Education; Labrador Community College; Eastern College.
1995 — 1996	Working Group, Committee on National Standards for Applied Science and Engineering Technicians

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Peler Fisher CV

DIRECTION OF GRADUATE STUDENTS AND RELATED ACTIVITIES

External Examiner, M.Ed. thesis (M.U.N.) Patrick J. Whelan, 1982. Internal Examiner, M.Ed. thesis (M.U.N.) Brendan A. Cooke, 1985. External Examiner, M.Ed. thesis (M.U.N.) Anne Humphries, 1989 External Examiner, M.Ed. thesis (M.U.N.) Stophen J. Bolan, 1995

ACADEMIC AWARDS AND DISTINCTIONS

- 1. Distinction in practical teaching, Postgraduate Certificate in Education (P.G.C.E.) London University, 1966.
- 2. Canada Council Doctoral Fellowship, 1977-1979.

GRANT RECORD

1982 — 1983	S.S.H.R.C. General Grant	\$2,190
1984 — 1987	S.S.H.R.C. Research Grant	\$17,295

PUBLICATIONS

- 1. An Investigation of Private Childcare Centres in the Province of Newfoundland and Labrador. Restricted Government Document, 1973. 105pp.
- Responsible for Sections II and III, Facility Design Standards for Elementary and High Schools, School Planning Manual. St. John's: Oovernment of Newfoundland and Labrador, 1973, revised 1976.
- 3. External Examinations in Secondary Schools in England and Wales, 1944 1964. Leeds: Journal of Educational Administration and History: Monograph #11, 1982 (ISSN 0140 0428). 83pp.
- Curriculum Control in England and Wales The Birth of the Schools Council, 1964. Leeds: Journal of Educational Administration and History, Vol XVI #2, July 1984.
- 5. Student Aspirations and Attitudes Towards the Revised High-School Program. St. John's: Institute for Educational Research and Development, Mcmorial University of Newfoundland, January 1985.
- 6. Parents' Views on the Revised High-School Program. St. John's: Faculty of Education Publications, Memorial University of Newfoundland, November 1985.
- 7. First-Year Performance of Recent High-School Graduates in the Chemistry Program at M.U.N. St. John's: The Morning Watch, Vol 13 #1-2, Fall 1985.
- CHEMISTRY 2202 UNIT VI The Chemistry of Selected Elements and Groups. St. John's: Government of Newfoundland and Labrador, February 1986.
- CHEMISTRY 2202 UNIT VI The Chemistry of Selected Elements and Groups Teacher's Guide. St. John's: Government of Newfoundland and Labrador, February 1986.
- 10. Post-Secondary Aspirations and Plans of Newfoundland High-School Students. Edmonton: The Canadian School Executive, September 1986.
- 11. Chemistry A Second Course, G.W. Rayner-Canham, P. Fisher, P. Le Couteur, R. Raap. Toronto: Addison-Wesley, 1989 ISBN 0-201-17885-0.
- Chemistry A Second Course, Teachers' Resource Book, G.W. Rayner-Canham, P. Fisher, P. Le Couteur, R. Raap. Toronto: Addison-Wesley, 1989 ISBN 0-201-17887-7

CONFERENCE PRESENTATIONS/SEMINARS

PERSONAL PROPERTY OF PRANT LAND CARACT FLATER ST. 1. 1. 1.

- 1. Curriculum Control in England and Wales The Birth of the Schools Council, 1964. Third annual conference of the International Association for the History of Education Paris, September 1981.
- Public Examinations, Yes or No? Faculty of Education Seminar Memorial University of Newfoundland, November 1981.

Peter Fisher CV

- Student Perceptions of the Revised High-School Program. Four broadcasts 'The Morning Show', CBC Radio, February 1985.
- The Influence of the High-School Chemistry Program on First-Year Chemistry Studies at M.U.N. Department of Chemistry Seminar (with Mr K. Toope, Booth Memorial High School) – Memorial University of Newfoundland, March 1985.
- 5. What Should we Emphasize to Ensure a Solid Foundation for Post-Secondary Chemistry? Chemistry Workshop - Roman Catholic School Board for St. John's, February 1986.
- 6. Parents' Views on the Revised High-School Program. Broadcast 'On the Go', CBC Radio, April 1986.
- 7. Post-Secondary and Career Plans of Newfoundland High-School Students. Seminar Department of Career Development and Advanced Studies, Government of Newfoundland and Labrador, April 1986.
- Public Expectations of our Schools. Administrators' Retreat Terra Nova Integrated School Board, October 1986.
- 9. Career Choice and Post-Secondary Education. Twillingate PTA, April 1987.
- Education: Preparation for Life or University? Professional Development Day, N.T.A. Conception Bay Centre, March 1988.
- 11. The Role of Technology in Education. Panel discussion, Provincial School Superintendents' Conference, May 1992.
- National Standard Competencies for Applied Science and Engineering Technicians: Development, Structure and Implications for Academic Program Development and Accreditation. With Lane Trotter, Dean of Technical Program Development – ACCC Annual Conference, Toronto, May 1996.

ADMINISTRATIVE POSITIONS (since 1985)

Memorial University

Member	Faculty of Science Undergraduate Studies Committee, 1985-1986.
	Taskforce on University Priorities - subcommittee on tuition and related fees, 1996
Chair	Fundraising and Selection Committee for the London International Youth Science Fortnight, 1972 – 1986.
	Chemistry Curriculum Committee, 1985 – 1986.

Provincial Government

Department of Career Development and Advanced Studies / Department of Education

 Member
 Post-Secondary Reorganization Steering Committee, 1987.

 Post-Secondary Reorganization Evaluation Steering Committee, 1988.

 Provincial Committee on a Common First Year, 1989 – 1993.

 Provincial Advisory Committee on the Primary, Elementary and

 Secondary Curriculum, 1990 – present.

 Provincial Senior High School Graduation Requirements Committee, 1990 – 1992.

 Provincial Science Curriculum Advisory Committee, 1991 – 1996.

 Engineering Technology Centre Steering Committee, 1992.

 Provincial Common First Year Engineering Technology Implementation Committee, 1993.

 Provincial Chemistry Curriculum Working Group, 1994 - present

 Chair
 University Program Implementation Committee, 1987.

Marine Institute of Memorial University

Member

Professional Development Committee, 1988 – 1990. Classification Committee, 1988 – 1990. Certification Committee, 1988 – 1990.

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Peter Fisher CV

	Engineering Technology Program Review Steering Committee, 1988 – 1990. Science and Technology Working Group, 1990 – 1992. Senate, 1991 – 1992. Executive Director's Advisory Committee, 1992 – present. Marine Institute Executive, 1994 – present. Division-related sub-committees, 1994 – present.
Secretary	Task Force on Degree-Granting, 1988 – 1990. Fisheries Technology Degree Program Committee, 1988 – 1990. Primary Technology Implementation Team, 1990 – 1991.
	Task Force on Faculty Development and Evaluation, 1992 – 1994.
Chair	Professional Development Seminar '88 Organizing Committee, 1988. Engineering Technology Program Review Committee, 1988 – 1990. Primary Technology Program Development Group, 1990 – 1991. Academic Division Technical Support Group, 1990 – 1992. Technology Program Development Steering Committee, 1990 – 1991. Senate Academic Assessment Committee, 1991 – 1994.
Director	Technology Diploma Program Development Project, 1990 – 1993.
Editor	Marine Science, 1988 — present.
Representative	ACCC College Contact Network, 1995 – present.

Council of College Presidents

Member	Programs Committee, 1991 – 1992, 1994 – present.
Member	Provincial Engineering Technology Articulation Committee, 1993-1994

External National Committees

Member

Working Group, Committee on National Standards for Applied Science and Engineering Technicians. Responsible for chemical and bioscience technician standards, 1995 – 1996.

August 1996

CANADIAN TECHNOLOGY HUMAN RESOURCES BOARD

NATIONAL TECHNOLOGIST STANDARDS UPDATE

Background

Between 1992 and 1994 HRDC was instrumental in helping an industry led initiative to produce the first set of national competency standards for applied science and engineering technologists. The project produced a series of thirteen volumes which describe the skills and knowledge required to gain entry into the technology work force.

The standards were met with enthusiasm and approval from partners across Canada and around the world. Educational institutions began using them as the basis for program refinement, several industries used them to set their hiring and training criteria, and the profession has been using them as the basis for certification of individuals and accreditation of schools.

Following the success of this project a similar project was undertaken to develop national technician standards. The result of the project was a series of occupational standards published as a database of competencies on CD-ROM. This new format allowed for easier development and updating as well as the introduction of emerging occupations into the database.

Issues

Revision

The technologist standards are now three years old. Following their wide spread use and review by industry and educational institutions it has become evident that several of the discipline areas are in need of revision, in particular the Civil, Electronics, Mechanical, Petroleum and Bioscience areas. Revision of these areas requires the addition of several discipline specializations, the elimination of certain competencies no longer required in the workplace and the inclusion of emerging competencies demanded by current technology. Also, based on feedback from industry and the profession, areas such as Power Engineering Technology, Industrial Design, Telecommunications and Construction Management need to be included in a revision of the Technologist Standards.

The thirteen National Technologist Standard volumes published in 1994, categorized by discipline of work, no longer accurately reflect the division of technology occupations. Canadian industry demands that technologists possess a broad range of competencies which often overlap the traditional disciplines used to develop curriculum. The Technician Standards Database allows for the customization of competencies to quickly respond to the needs of industry. It is important to revise the Technologist Standards to provide the same responsiveness.

The current Technologist Standards are an excellent base upon which to build a Technologist Standards Database. This project will enhance the current standards by adding the recommended discipline areas, deleting outdated competencies and restructuring the standards to reflect industry's need for rapid change.

Sector Standards

A number of Sector Councils are defining the skills required to work within their industry sector. These standards are typically narrow in scope, highly specific to a particular series of tasks within an occupation. This type of 'micro' standard is required by industry to define competence in occupations where licensing may be a requirement, or where repetitive yet precise skills are needed.

In contrast, in order to become competent within an advanced profession such as technologist, a broad-based entry level set of skills and competencies defining a field of practice are required prior to working in a narrow occupation. These advanced 'macro' occupational standards are necessary to provide Canadians entering the technology workforce with a solid foundation of competence, which can then be applied in a variety of sector specific situations.

For example, a biological technologist may eventually work in the food processing industry, the agricultural industry, the environmental industry or the health care sector. Yet if that technologist's training and education is based solely on the requirements of one sector, then he or she is left without the mobility required of today's workforce. Occupational standards provide for the competency to adapt to new situations requiring the use of innovative thinking combined with a solid background of fundamental technical know-how.

Cross Sectoral Implications

There are a number of specializations within the technologist standards that touch upon various industry sectors. In effect, there are technologists working in nearly every industry sector in Canada. The competencies required of a technologist in a particular field are not necessarily restricted to one sector.

For example, the Construction Management Technologist requires the ability to manage many aspects of complex construction sites such as multi-dwelling residential projects, high-rise commercial developments and large scale municipal projects. They must demonstrate competence in areas such as building systems, electrical systems, industrial design and management. In the same way that an engineering firm may work on an urban commercial project one year and the development of a hydro-electric dam the next, a construction management technologist must have the flexibility to go where the work is. This is true for all technologists, in that they must have the underlying competence to adapt to a variety of situations.

Updates

The technologist and technician standards are designed to reflect the emerging needs of industry in a number of rapidly evolving fields. They must, therefore, be highly adaptive. The current format for the technologist standards does not allow for inexpensive and rapid publishing of revised standards. An updating process must be developed which will capture the current needs of industry and be easily circulated to those using the technologist standards on a regular basis.

Objective

The objective of the project is to improve the existing National Technologist Standards to better respond to the evolving needs of Canadian industry and to facilitate the development of up-to-date technology curriculum in post-secondary institutions. The project seeks to produce a series of technologist occupation standards in the same manner as the technician standards, i.e. as a database of competencies available on CD-ROM. Since the database engine already exists, this would require very little computer development. As well, a large number of the existing competencies can and will be used again in the updated standards.

The revised technologist standards will be harmonized with existing standards produced by Sector Councils in order to avoid duplication and ensure full coverage of all competencies required of technologists from career entry to specialization.

The completed Technologist Standards will be integrated with the Technician standards on one CD-ROM. An annual update process will be implemented which will eliminate the need for significant revision of the standards. The revisions may be done electronically, with input from all users of the standards. The effectiveness of an electronic publishing and revision process will allow for frequent updates at very little cost.

Activities

The CTHRB proposes the following parameters for the technologist standards update project:

- project period of twelve months starting September 1, 1996;
- use of existing technologists standards as primary data;
- use of database from technician standards for data engine;
- participation of 100-200 practicing technologists in national update workshops;
- participation of 800 representatives from industry, education and the profession in final validation process.

The specific project activities are outlined as follows:

- establishment of working group, each member with expertise in occupational analysis and in specific technology occupational areas;
- analysis of existing standards for refinement of language and removal of repeated competencies;
- analysis of Sector Council standards in order to ensure harmonization;
- establishment of cross Canada workshops for review of first draft of standards;
- entry of new technologist competency data in existing database model;
- national validation project;
- production of CD-ROM;
- release of new technologist standards;
- establishment of annual National Technology Standards revision process.

The project will proceed much the same way as the Technician Standards project. A team of experts will conduct workshops with industry participants across Canada. The workshops will determine the addition and deletion of competencies, as well as the clustering of competency statements into specializations. The resulting document will then be circulated to all stakeholders for comment and revision. The final draft will then be presented to participants for validation.

Throughout the process, Sector Councils will be consulted and provided with opportunities for input. These include, but are not restricted to; the CCHREI, CSTEC, EEMAC, WITT, CARS, CCA-CHBA and CAMC.

Since the database model already exists, and much of the data required has been published in the 1994 National Technologist Standards, the activities for this project will require less time and resources then the Technician Standards project. The final activity of the project will be the establishment, in cooperation with the Canadian Technology Human Resources Board, of a system for the annual update of both the Technologist and Technician Standards.

Resources for these activities will be split between the private sector and Human Resource Development Canada. The private sector financial contribution will include administration and staff costs as well as time required for each participant; developers, workshop participants and validators. HRDC will participate by covering the costs to execute the project.

Expected Outcomes / Results:

- production of technologist standards CD-ROM, with detailed competencies required in over 50 technology specializations;
- review and endorsement of new standards by over 1,000 participants;
- symbiosis of National Technician and National Technologist Standards;
- increased acceptance by industry and education of National Technologist Standards.

The National Technologist Standards will be published on CD-ROM in such a manner as to allow the user to review the document by discipline, as is the case with the current thirteen volumes, by specialization or simply by competency areas. This flexibility is crucial for the widespread use of the standards.

Industry requires a tool which can be customized to meet their needs, yet reflects an average of the competencies required in the Canadian Technology work force. These standards will continue to be used as a means of developing internal training, promoting full use of workforce skills and determining employment criteria.

Education requires an accurate and updated series of competencies structured around traditional disciplines in order to build programs, but flexible enough to respond to industry's need for customized training.

The profession requires a rigid series of competencies in order to establish certification and accreditation criteria to ensure public safety.

This project will produce a National Technologist Standard which responds to all stakeholders' needs.

Communications Strategy

The Canadian Technology Human Resources Board will undertake a communications program in advance of the completion of the project. This will include newsletter articles, distribution of information via the Canadian and international media (newspapers, radio, etc.) The Minister of Human Resources Development will be asked to circulate a press release supporting the development and use of the Standards.

Proponents

The Canadian Technology Human Resources Board is a partnership between technology employers, practitioners, educators and organized labour groups. Each of the participants endorses the need for up-to-date and approved national standards.

The standards will continue to be used by industry as hiring and training criteria, by the profession for recognition of individual achievement and by education as a means of developing nationally recognized technology programs. Each of these participants can thus be certain that their criteria is in harmony with that of the other stakeholders.

Various Sector Councils have acknowledged the participation of technologists within their industry sector. In order to avoid duplication, the CTHRB will not produce standards where they are already established. The CTHRB will maintain its focus on standards at the job entry level. In cases where standards already exist, or are under development, the CTHRB will examine them in order to determine their suitability for use as technologist standards.

Advantages of the Sectoral Approach

The Canadian Technology Human Resources Board is recognized across Canada for its expertise in developing standards. The partnership upon which the CTHRB is based allows for the widest possible participation in the development of the national standards. The Sectoral approach ensures that all stakeholders are involved in the process, and that responsibility for the final product remains in the hands of those who helped develop it.

Care will also taken to ensure that provincial requirements are addressed through the participation of the Council of Ministers of Education.

Employment Equity

This project will take into account the low participation rates of women and aboriginals in the technology work force. Women and aboriginals will be actively recruited to participate in the development and review of the standards. The organization Women in Trades and Technology (WITT) will be asked to participate in the validation process and to provide their views on the Canadian technology work force.

Consultants hired to work on the project must be sensitive to employment equity issues and must be able to ensure that the standards contain no artificial barriers to opportunities for women and minorities in the technology work force.

Environment, Ethics and Society represents a series of competencies in the Technologist Standards. These competencies include statements regarding the need for appropriate recognition of the diversity of the Canadian work force. These statements will be assessed as to their accuracy and appropriateness.

Funding Request and Private Sector Contribution

HRDC is requested to contribute \$283,500 for the completion of this project. This represents 48% of the project's total cost of \$595,150. (Please see attached budget.)

Recommendation

It is recommended that this project be approved for a contribution of \$283,500 over a period of thirteen months beginning September 1, 1996.

Canadian Technology Human Resources Board			
National Technologist Standards Update Project			
1996-1997 Budget			
Acutal Expenses			
ltem	HRDC	Industry Cash	Industry in kind
Chairperson - fees	0.00	0.00	10400.00
Chairperson - honorarium	0.00	0.00	0.00
Chairperson - expenses	2500.00	0.00	0.00
IAS Council - fees (12 persons x 2 day @\$50/hr.)	0.00	0.00	48000.00
IAS travel expenses (6 persons @\$500)	12000.00	0.00	0.00
IAS - ex officio expenses	0.00	12000.00	0.00
Facilities expenses	20000.00	0.00	0.00
Management of Advisory Committee			
Executive Director	26000.00	0.00	0.00
Senior Association Staff	0.00	13000.00	0.00
Administration of Technologist Project			
Office support staff	13000.00	13000.00	0.00
Office overhead (support staff @15%)	0.00	1950.00	0.00
Travel - Project meetings	6500.00	0.00	0.00
Project work (meetings assignments etc.)	10400.00	0.00	0.00
Project work - Association (communications support)	0.00	10400.00	0.00
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Equipment			
Computer/Printer_etc	4000 00	0.00	0.00
Software	1000.00	0.00	0.00
Office Expanses/Incidentals/atc - Council	3900.00	0.00	0.00
Office Expenses/Incidentals/etc Obunch	0.00	3900.00	0.00
Onice Expenses/incidentais/etc Association	0.00		
Project Work			
Misc Project Costs (travel mailings etc.)	2600.00	0.00	0.00
Client group consultations, etc.	2000.00	0.00	0.00
Office Expenses/Incidentals - Council	4600.00	0.00	0.00
Office Expenses/Incidentals - Obuncin	0.00	6000 00	0.00
Once Expenses/incidentals - Association	0.00	0000.00	0.00
Working Group (5 members)			
Individual Member Contracts (5 @ \$20,000)	10000 00	0.00	0.00
	13000.00	0.00	0.00
Once expenses/incidentals	13000.00	0.00	0.00
Industry Participation			
Workshops (150 @ \$50/br)	0.00	0.00	60000 00
Volidation (800 @ \$50/hr)	0.00	0.00	120000.00
Association National/Pagional staff	0.00	0.00	12000.00
Association Mational/Regional Stati	0.00	0.00	13000.00
Other Identifiable items			
	25000.00	0.00	0.00
Drinting (Dubliching (CD DOM medium)	25000.00	0.00	0.00
Printing/Publishing (CD-ROW medium)	19000.00	0.00	0.00
laterest Credit			
Tatal Castributian	000500.00	00050.00	054400.00
	283500.00	60250.00	251400.00
TUTAL PROJECT COSTS	595150.00		
Interest earned			
Gol lebate			

Canadian Technology Human Resources Board National Technologist Standards Update Project 1996-1997 Budget Acutal Expenses

ltem		Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	TOTAL
Chairperson - fees (2 days/month @\$50/br)		800	800	800	800	800	800	800	800	800	800	800	800	800	10400
Chairperson - honorarium		000	000	000	000	000	000	000	000	000	000	000	000	000	10-100
Chairperson - expenses		500	0	0	500	0	0	500	0	0	500	0	0	500	2500
		500	U	U	500	2300									
IAS Council - fees (12 persons x 2 day @ \$50/hr)		9600	0	0	9600	0	0	9600	0	0	9600	0	0	9600	48000
IAS travel expenses (6 persons @ \$500)	*	2500	0	0	2000	0	0	2500	0	0	2500	0	0	2500	12000
IAS - ex officio expenses		2400	0	0	2400	0	0	2400	0	0	2400	0	0	2400	12000
Facilities expenses	•	4000	0	0	4000	0	0	4000	0	0	4000	0	0	4000	20000
Management of Advisory Committee															
Executive Director		2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	26000
Senior Association Staff		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	13000
Administration of Technology 14 Days															
Administration of Technologist Project															
Office support staff (HRDC contribution)	*	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	13000
Office support staff (Industry contribution)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	13000
Office overhead (support staff @15%)		150	150	150	150	150	150	150	150	150	150	150	150	150	1950
Travel - Project meetings	*	500	500	500	500	500	500	500	500	500	500	500	500	500	6500
Project work (meetings, assignments, etc.)	*	800	800	800	800	800	800	800	800	800	800	800	800	800	10400
Project work - Association (communications, support)		800	800	800	800	800	800	800	800	800	800	800	800	800	10400
Equipment															
Computer/Printer_etc		4000	0	0	0	0	0	0	0	0	0	0	0	0	4000
Software		1000	0	0	0	0	0	0	ő	0	ő	0	0	0	1000
Office Expenses/Incidentals/etc - Project		300	300	200	200	200	200	200	300	300	300	300	300	300	3000
Office Expenses/Incidentals/etc Association		300	300	300	300	300	300	300	300	300	300	300	300	300	3900
Project Work															
Mice Desired Orate (travel multi															
Misc. Project Costs (travel, mailings, etc.)		200	200	200	200	200	200	200	200	200	200	200	200	200	2600
Client group consultations, etc.		0	0	0	0	5000	5000	5000	5000	0	0	0	0	0	20000
Office Expenses/Incidentals - Council	*	350	400	350	350	350	350	350	350	350	350	350	350	350	4600
Office Expenses/Incidentals - Association		500	500	500	500	500	500	500	500	500	500	500	500	0	6000
Working Group (5 members)															
Individual Member Contracts (5 @ \$20,000)		40000	0	0	0	0	20000	0	0	0	0	0	0	40000	100000
Office expenses/incidentals	*	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	13000
Industry Participation															
Workshops (150 @ \$50/hr)		0	0	0	0	15000	15000	15000	15000	0	0	0	0	0	60000
Validation (800 @ \$50/br)		0	ő	0	0	10000	10000	10000	10000	40000	40000	40000	0	0	120000
Association National/Regional staff		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	13000
Other Identifiable items															
										5000	5500				
		0	0	0	0	0	0	0	0	5000	5000	5000	5000	5000	25000
Plinung/Publishing (CD-ROM mealum)		0	0	0	0	0	0	0	4000	0	0	0	0	15000	19000
Interest Credit GST Credit															
Industry		17550	5550	5550	17550	20550	20550	32550	20550	45550	57550	45550	5550	17050	311650
HRDC	*	58150	6200	6150	12650	11150	31150	18150	15150	11150	18150	11150	11150	73150	283500
			5200	0,00											
TOTAL PROJECT COSTS		75700	11750	11700	30200	31700	51700	50700	35700	56700	75700	56700	16700	90200	595150

Interest earned GST rebate

*HRDC Contribution

National Technologist Standards Update

Project Overview

The CTHRB asked the proposed Working Group Members to meet with several of the Board Members the weekend of September 21, 1996 to assist with the development of a proposed project plan for presentation to the full Advisory Committee.

OBJECTIVES

The CTHRB and Human Resources Development Canada agreed on the following project objectives:

- Convert the technologist standards into the same format as the technician standards.
- Expand the technologist standards to include new skills and competencies. Areas specifically suggested in the original project proposal for investigation included Power Engineering Technology, Industrial Design, Telecommunications, and Construction Management.
- Validate revisions to the technologist standards.
- Produce a CD-ROM for standard distribution.
- Develop an economically feasible valid update process for the standards.

The original project plan was reviewed to determine possible alternatives for achievement. In addition, the proposed budget and project time line were reviewed.

PROJECT PLAN

Following considerable discussion the following general plan was recommended for Advisory Committee consideration:

1. Based on input to date and received by early December the existing standards will be revised. (The CTHRB and the Advisory Committee will arrange for an announcement of the start of the project and request submissions for revisions.) A team of experts in occupational analysis and in specific technology occupational areas will comprise the Working Group. They will evaluate the submissions for revision and prepare revised draft standards based on their expert evaluation.

- 2. Two practitioner workshops will be held for each discipline area at separate locations in Canada. The degree of inclusiveness for the workshops will be based on budgetary constraints. Members of the Advisory Committee will be tasked with locating suitable workshop participants.
- 3. The Working Group will review workshop input and revise the draft standards to reflect the workshop input. The Advisory Committee will undertake a revision of the draft standards prior to the evaluation exercise.
- 4. The revised standards will be mailed out to the previous workshop participants and a further sampling of practitioners for evaluation. Again, the Advisory Committee will be asked to provide participants for the evaluation exercise.
- 5. The Working Group will review responses received for the evaluation mailing and revise the standards as appropriate.
- 6. The Advisory Committee will have final authority to release the revised standards.
- 7. It is recommended that the revised standards be released as a "WORKING DRAFT" for the beginning of a continuous review/revision process.

Continuous Revision

- 8. During the following year the CTHRB collect suggestions for revisions to the National Standards.
- 9. A panel of experts review the input on a yearly basis and make the appropriate revisions to the standards.
- 10. Upon completion of revisions the standards would again be released as a "WORKING MODEL" with new revisions highlighted or marked in some fashion such that they would be easy to identify.
- 11. Steps 7, 8, and 9 would be repeated on a yearly basis.

RECOMMENDATIONS

While the Working Group has the resources and expertise to conduct the conversion and revisions to the standards, they do not have the resources to complete the planning and make arrangements for any of the agreements that will likely be required for the "Continuous Revision" process. It is therefore

recommended that he Advisory Committee form a small subcommittee to review and establish this Continuous Revision process.

Discussions around several basic operational areas resulted in the following recommendations:

- 1. That members of the Advisory Committee be paired with members of the Working Group to assist in the collection of new skills and competencies in their representative groups and to assist in the identification of potential individuals to participate in workshops or in the evaluation/validation process.
- 2. That the release of the technician standards CD-ROM be followed quickly by a questionnaire to determine customer response to the CD-ROM format so that any required changes can be built into this project. Also, that the possibility of a special hard copy publication be investigated as a value added product for those wishing only a part of the standard or those without CD-ROM access.
- 3. That members of the Advisory Committee review the technician standards CD-ROM for comments on its presentation and format.
- 4. That technologist standards be added directly to the technician standards database such that common skills and competencies between technicians and technologists are easily identified and need not be repeated in two separate databases.
- 5. That the Advisory Committee pursue recommendations to the CTHRB regarding further areas for development that appear during this standards revision process.
- 6. That the attached revisions to the original proposed budget be accepted.
- 7. That the following individuals be appointed to the Working Group:

Bill Allen Don Byers Ron Farrell Ron Isaac Mike Westmorland

8. That Denis Dubois be approved to provide translation services to the project.

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	Revised Budget	
Chairperson Expenses		
- Travel	\$ 1,500.00	3 meetings at \$500/meeting
- Expenses	\$ 600.00	3 meetings at \$200/meeting
Advisory Committee		
- Travel	\$ 18,000.00	3 meetings at \$500/member
- Expenses	\$ 7,200.00	3 meetings at \$200/member
Facilities Rental	\$ 1,000.00	
CTHRB Management	\$ 26,000.00	
of Advisory Committee		
CTHRB Travel	\$ 3,000.00	6 meetings at \$500/meeting
CTHRB Expenses	\$ 1,200.00	6 meetings at \$200/meeting
Support Staff - data entry	\$ 6,000.00	
- miscellaneous	\$ 6,000.00	
Computer, Software, etc.	\$ 5,000.00	
General Office Expenses	\$ 5,500.00	
Software Modifications	\$ 1,000.00	
Working Group Contracts		
- Contracts & Co-ordination	\$ 115,000.00	
Working Group Travel	\$ 12,500.00	6 meetings at \$500/meeting
	\$ 6,000.00	6 meetings at \$200/meeting
Office Expense for Validation	\$ 4,000.00	800 validations at \$5/validator
Translation	\$ 20,000.00	
Printing/CD Production	\$ 5,000.00	
Workshops	\$ 39,000.00	13 disciplines at \$3000 per discipline
TOTAL	\$ 283,500.00	
Dollars for CTHRB	\$ 42,500.00	
% of contract	15%	

				ter	4t	h Quar	ter	1st	t Quar	rter	2r	id Qua	rter	3rd	Qua	ter	4th	Quar	ter
ID	Name)uratio	Resource Names	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Project Planning Meeting	0d		•															
2	Assignment of Areas	0d		•															
3	Revision of Common Areas	46d	Working Group		ŢŢŢŢ	\square													
4	Full Meeting	2d	Full Committee			1													
5	Development of Update Process	300d	Update Subcommitte			777				//////	Ì	//////		77777		2			
6	Development of New Areas	67d	Working Group																
7	Comparison to Technician Standards	35d	Working Group			7.2	816												
8	Recruitment of Workshop Participant	60d	Full Committee		1														
9	Progress Evaluation Meeting	1d	Working Group]	1		Ι												
10	Workshops	21d	Working Group		1														
11	Recruitment of Evaluation Participan	60d	Full Committee						12.75		1								
12	Review of Workshop Results	45d	Working Group						and the second										
13	Progress Evaluation Meeting	2d	Working Group							1									
14	Full Meeting - Approval for Evaluatio	1d	Full Committee							•									
15	Evaluation Exercise	90d	Evaluator Network																
16	Incorporation of Evaluation Results	78d	Working Group											Ż.					
17	Progress Evaluation Meeting	2d	Working Group										I						
18	Review of Proposed Update Process	30d	Full Committee		1												à		
19	Final Meeting - Full Approval	2d	Full Committee														◆		
Proje	ct: Technologist Update Crit	ical	<i></i> F	rogre	ss 🔳				Sumn	nary	<u>^</u>								
Date	10/22/96 Nor	ncritical	N	vilesto	one				Rolle	d Up	\diamond								
						Page	1												



Canadian Technology Human Resources Board Bureau canadien des ressources humaines en technologie

DRAFT TERMS OF REFERENCE FOR THE NATIONAL TECHNOLOGIST STANDARDS UPDATE COMMITTEE

Objective:

The overall objective of the committee is to improve the existing National Technologist Standards. In particular, the objectives of the Committee are;

- To convert the technologist standards into the same format as the technician standards;
- To expand the technologist standards to include new skills and competencies in the areas of Power Engineering Technology, Industrial Design, Telecommunications, and Construction Management;
- To develop an economically feasible valid update process for the standards.

The National Standards will serve to promote the recognition of applied science technologist qualifications, to facilitate mobility in the Canadian technology work force, to provide reference for the development of technology education and training and to establish the competencies required for professional certification.

Duties and Responsibilities:

The Committee will determine and implement the activities required for the successful completion of the stated objectives. The activities include;

- Establishment of a development, evaluation and distribution model for the National Standards Revision Project;
- Establishment of the National Technologist Standards format, in terms of language, layout, and specificity;
- Establishment of the occupational areas to be covered under the National Technologist Standards Revision Project;
- Designation of a Working Group, to carry out the activities assigned by the Committee;
- Establishment of a national evaluation exercise for the draft standards, including recruitment of all participants;
- Establishment of a permanent, regular, long term revision process for both the National Technologist and National Technician Standards;
- Continued support and promotion of the work of the Committee upon completion of the project;
- Identification of any further activities which may be necessary for the completion of the project.

Technologist Standards Update Committee

1st DRAFT Directory (Please correct mistakes and fax to (613) 233-3812)

October, 1996

Advisory Committee

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