



# Industrial Electrician Apprenticeship Program for B.C.

**Bob Hughf and Brad Smith**  
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# Concept to Creation

## It's been a a four year apprenticeship!



- 2003 HITAC selects industrial electrician as cornerstone project to develop a competency based modular framework
- 2004 HITAC presents competency based modular concept to Labour Groups, ITA and Educators
- 2005 HITAC/Labour sign Labour Market Partnership Agreement to conduct research, design framework and develop occupational profile for industrial electrician
- 2006 ITA approves HITAC/Labour proposal for establishment of new competency-based modular industrial electrician program  
ITA commits \$500,000 to develop program  
Development work commences
- 2007 July - sufficient development work completed to implement  
October - in-school delivery commences

- **Heavy Industry Training Advisory Committee**
  - **Mission**
    - Lead the transformation of British Columbia's industrial training system and workplace legislation and regulations
  - **Membership - employers in B.C. from**
    - Oil & Gas
    - Solid Wood Forest Products
    - Mining & Smelting
    - Pulp & Paper
  - **Committee formed in 2001**
    - No employees, fully managed by member employer representatives
    - General Meetings in Vancouver 5 times per year

# Industrial Electrician



- **2003 HITAC employer survey & workshop**
  - Objectives
    - **Identify at least 1 workforce development initiative – a big win - that every attendee is willing to support as an industry wide work force development initiative**
    - Agree on a list of criteria for evaluating the strength of the business case for implementing industry wide training initiatives
    - Develop a set of recommendations for the future role of HITAC
    - Identify a list of potential barriers and risks to implementing the industry wide initiative
- **Creation of Industrial Electrician qualification highest priority initiative for HITAC**
  - Did not already exist in B.C., yet employers desired
  - Highest potential to move towards modularization
  - Excellent starting point to move towards competency basis

# Labour



- **Organized labour groups with significant interest in Electrical Trade & Industrial application**
  - B.C. Federation of Labour
  - United Steelworkers (USW)
  - International Brotherhood of Electrical Workers (IBEW)
  - Pulp, Paper & Woodworkers of Canada (PPWC)
  - Communications, Energy, & Paperworkers (CEP)
  - Canadian Auto Workers (CAW)

# Terms of Reference for Project



- **HITAC/Labour Steering Committee agreed on**
  - **Creation of B.C. Trade Qualification (T.Q.) - Industrial Electricians**
  - **Red Seal IP endorsement for Industrial Electricians**
  - **Consideration of Competency Based Modular Design**
  - **Recognition of Common Core Competencies**
  - **Recognition of Industrial Sectors unique needs**
  - **Consideration of Alternate Delivery Opportunities**
  - **Industry Validation of Needs and Proposed Model**
  - **Implementation Plan Required**

# Project Steering Committee



Richard Boyce	President, Local 7619 USWA	Labour
Andy Cleven	Training Director, Local 213 IBEW	Labour
Philip Davies	2nd Vice-President National Office, PPWC	Labour
Larry Daskoch	Superintendent, Maintenance Services, Teck Cominco- Trail Operations	HITAC
Ed Doherty/Richard Demchuk	Director, Human Resources/Operational Excellence, Catalyst	HITAC
Bill Harper	BC Federation of Labour	Labour
Bob Hughf	National Representative, CEP	Labour
Paul Sourisseau	Manager, Training Services, IFLRA	HITAC
Mike Stekelenburg	Maintenance Supervisor, Alcan	HITAC
Terry Farrow	Operations Team Leader, Spectra Energy	HITAC
Michael Jeffries	Representative of Local 2301 CAW-Canada	Labour
Ed Wong	VP, Educational Partnerships, Business Council of BC	BCBC
Silvia/Greg Tolliday	Chair – Independent Consultant (non-voting)	
Michelle Lanouette	Rep., Human Resources Skills Development Canada (non-voting)	HRSDC
Russ Robertson	Industry Training Authority of BC (non-voting)	ITA
Danny Bradford	Chair, School of Industry & Trades Training, Selkirk College (non-voting)	Education
Peter Poeschek	Chair, School of Trades Thompson Rivers University (non-voting)	Education

# Project Steering Committee



## Responsible for:

- **Overseeing project scope, research, planning, schedule and budget**
- **Selecting independent Chair**
- **Hiring educational consultants & researchers**
- **Designing training and assessment framework collaboratively**
- **Identifying and selecting Subject Matter Experts**
- **Communicating with stakeholders**
- **Ensuring outcomes are achieved (deliverables)**

## **Reports completed:**

- 1. Labour Market Demand and Supply Analysis**
- 2. Industry Scope, Apprenticeship Capacity & Perspectives on Training Needs**
- 3. Options Report Training Program Design & Delivery**
- 4. Provincial Occupational Analysis**
- 5. Regional Mapping of Apprenticeship Demand**
- 6. Comparative Analysis Construction vs. Industrial Competency Requirements**

# Research Conclusions



- **Need exists for a separate industrial electrician program**
- **Sufficient demand to justify standalone program**
- **Skills shortage is real - increased competition for skilled trades**
- **Employers need to increase number of apprentices**
- **No single trades training model to adopt in its entirety**
- **Need to design program to suit BC needs utilizing research and our collective experience**

# Key Elements of Program Design



- **Industrial Sectors defined Competencies & Performance Standards**
- **Competency based assessment**
- **Core Competencies, Advanced Competencies**
- **Comprehensive Apprentice Log Books**
- **Designated Assessors**
- **Assessor Guides, Training & Registration**
- **Moderators - component of Quality Assurance Program**
- **Management and administrated through an ITO**

# Occupational Analysis Process



**Subject  
Matter  
Expert  
SESSIONS**

- **Produce SNAPSHOT of ELECTRICIAN'S WORK**
- **Describe JOB DUTIES plus CRITICAL TASKS in each**
- **SORT these requirements**
- **Specify SECTOR-SPECIFIC requirements**
- **Reach AGREEMENT on what is essential CORE.**

## **COMPARE results to:**

- Provincial Electrical Training Outline
- National Occupational Analysis
- BC Profile for Construction Electrician

**Industrial  
Electrician  
COMPETENCY  
PROFILE &  
Program Outline**

# Modular Approach & Certification



Total Competencies 127	Program Requirements
72 Core Competencies (Red Seal) [264 Credits]	264 Credits
23 Advanced Competencies – A [86 Credits]	25 Credits
32 Advanced Competencies – B [136 Credits]	10 Credits
<b>Trade Certification</b>	
Red Seal - achieve 70% on Inter-Provincial examination	
BC Trade Qualification - completion of Core & Advanced Competencies	
<b>Additional Advanced Competencies</b>	
- Provincial Recognition for Life Long Skill Development	

# In-school Program Delivery



- **Small Group of Public Institutes expressed interest and got involved in program development and delivery**
  - TRU – Kamloops
  - NIC – Vancouver Island
  - COR – Cranbrook
  - CNC – Prince George
- **In-school 40 weeks, 10 weeks per year**
- **First in-school training October 2007**
- **January – March 2008**
  - Level Two at TRU

# Workplace Competency Assessment



- **Apprentices to be assessed on workplace competencies**
  - **Assessors in-house, trades or supervision, with IP in Electrician**
  - **Assessor training 2 days long, followed by practical review of first assessment**
  - **Assessors also registered with ITA**

# Competency Based Approach



**Chose:**      **Collection & verification of evidence**

**Not:**          **A specified practical hands on  
assignment and assessment of each  
competency**

# Types of Evidence



- **Direct observation – watching apprentice**
- **Inspection of work – inspecting finished work**
- **Questions & discussion**
- **Daily written records – diary, project reports, etc.**
- **Workplace records – maintenance assignments**
- **Task Verification – testimony of trades & supervisors**

# Assessor Needs to ensure:



## Apprentice can complete task:

- **Safely**
- **Repeatedly**
- **Without Assistance**
- **According to**
  - **Regulatory Requirements (internal & external)**
  - **Assessor Guide**
  - **Industry Best Practices**
- **Within Acceptable Industry Timeframes**

# Resources Training Organization



- **New ITA model assigns management of training programs to ITO's**
  - HITAC applied to ITA for formation of RTO in 2006
  - RTO formed in 2007, during implementation of Industrial Electrician
  - 14 training programs assigned to RTO initially
- **RTO Board of Directors**
  - Employer representatives
  - Labour Representatives
  - ITA (ex officio)
  - HITAC Steering Committee (ex officio)

# Completing & Sustaining the Program



**Implementation  
Committee**



**Hand Off**

**RTTO**

## Program Development & Implementation Tasks for RTTO

- Summative Evaluation of Program
- Communications
  - Program Promotion
  - Inquiries & Customer Service
- Moderator / Quality Assurance Provisions
- Curriculum Development
  - Intercessional learning materials
  - Year Three and Four learning materials
- 2008/09 Training Schedule
  - Apprenticeship training
  - Assessor Training
- Others

# Moderation System (Accountability)



- A moderation system is essential to ensure graduating apprentices meet the industry defined competency standards that ITA and RTO have approved for Trade Certification
- The moderator works to ensure assessment is fair, valid and consistent.
- Moderators trains, support and coach assessors
- Audits are conducted on assessments

# Program Design aligns with RTO values



- **Quality**
- **Responsive**
- **Accountability**
- **Integrity**
- **Collaboration**

# Template for other Trades



- **Industrial Sectors defined Competencies & Performance Standards**
- **Competency based Assessment**
- **Core Competencies, Advanced Competencies**
- **Comprehensive Apprentice Log Books**
- **Designated Assessors**
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# Lessons Learned



- **Competency based model**
  - Significant benefits
  - Requires higher commitment levels
  - Requires more resources to manage
  - Implementing in existing system presents big challenges
- **Partnering approach to project steering**
  - Credibility & trust established through the process
  - Alignment of major interest groups in the outcome