TEXAS SKILL STANDARDS BOARD

Developing Skill Standards - A User's Guide

A Guide for Texas Industry Groups Developing Skill Standards for Recognition by the Texas Skill Standards Board

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Introduction to the TSSB Skill Standards Development User's Guide

This user's guide is based on the *Guidelines for the Development, Recognition and Usage of Skill Standards - Texas' Framework for Skill Standards* (the *Guidelines for Development*). It assists Industry Technical Advisory Committees (ITACs) who are developing skill standards for which they intend to seek Texas Skill Standard Board (TSSB) recognition. It assists these groups with their skill standards development effort and with their skill standards recognition request submissions.

This user's guide consists of eight chapters. The first seven chapters explain the essential steps defined in the *Guidelines for Development* for developing skill standards. The final chapter describes the recognition application requirements and process.

1. Identify the Occupation and Review Resources for Relevant Information
2. Assemble the Industry Technical Advisory Committee (ITAC)
3. Determine Existing Information Sources Pertinent to the Proposed Skill Standards Development Effort.
4. Determine the Plan, Method of Analysis and Strategy for Validation
5. Develop Work-Oriented Information
6. Develop Worker-Oriented Information
7. Analyze, Synthesize and Organize Data
8. Recognition Application Process

What are Skill Standards?

Skill standards are performance specifications that identify the knowledge and competencies an individual needs to succeed in the workplace. They document the skills, knowledge, and performance standards that employers require from their workers, and serve as a vehicle to communicate that information to education and training providers. Skill standards are an ideal source of the industry-driven skills, knowledge, and outcomes required for competency-based curricula within Texas-based community and technical colleges.

Skill standards:

- Describe both the work itself (duties and tasks) and the worker characteristics (the skills and knowledge required to competently perform the work).
- Are for sub-baccalaureate occupations with strong employment and earnings opportunities.
- Are tools for communicating industry-required worker skills to education and training providers.

What Role Does the TSSB Play?

The TSSB does not develop skill standards. Industry develops skill standards. The TSSB provides assistance and guidance during the skill standards development process and assists educators and training providers with incorporating skill standards into their training and education curricula.

The TSSB has the following four mandates:

- Validate and recognize nationally established skill standards to guide curriculum development, training, assessment, and certification of workplace skills;
- Convene industry groups to develop skill standards and certification procedures for industries and occupations in which standards have not been established or adopted and recognize the skill standards and certification procedures;
- Review skill standards developed by other states and nations and enter into agreements formutual recognition of standards and credentials to enhance portability of skills, and;
- Promote the use of standards and credentials among employers.

The TSSB was established by the Texas Legislature in 1995, as an 11-member advisory board to the Governor and the Legislature. Board members are appointed by the Governor, and include:

- 7 business and industry representatives
- 2 labor representatives
- 1 secondary education representative
- 1 post-secondary education representative

Notification of Intent to the TSSB

Before an industry group begins its skill standards development effort, the group should notify the TSSB if it intends to seek TSSB recognition of its skill standards. The Notification of Intent (NOI) formally indicates to the TSSB that a collaborative effort to develop skill standards is underway.

The NOI is a basic notification form that states the name of the ITAC, the proposed occupational area encompassed by the skill standards, an estimated date of completion and submission to the TSSB, and the skill standards effort contact name and address (normally the ITAC Chair contact information). It is signed by the ITAC Chair and faxed or mailed to the TSSB. Refer to Appendix A for an example of a NOI form. A blank NOI form is available on the TSSB website at www.tssb.org. Click on the "Toolkit for Developing Skill Standards" button on the left side of the home page and see the link for Notification of Intent to Develop Skill Standards.

The ITAC should submit the NOI as soon as possible for project evaluation, and to ensure that TSSB staff can provide technical assistance and guidance at the beginning of the development process. The TSSB will then verify that no similar projects are underway elsewhere in Texas or in other states, and that no similar skill standards already exist. If another organization, ITAC, or state is pursuing similar standards, the ITAC will be notified by the TSSB. This saves a great deal of potentially duplicated time and effort. At that point, it is the ITAC's decision to either cease development or collaborate with the other group on the skill standards development.

In the event that skill standards have been independently developed within the previous 36 months by another industry group in Texas, the ITAC may submit those standards for recognition. In that case, no NOI is required but the ITAC must submit the *Application for Skill Standards Recognition* along with all of the forms and documentation required as part of the application package, as described in **Applying for Skill Standards Recognition**.

Applying for Skill Standards Recognition

Applying for recognition is a thorough process that ensures that the skill standards:

- Have been formally defined and recognized by a representative group of employers and workers within an industry or occupational area
- Have been built using a procedurally valid development process
- Have content validity and have a commitment for ongoing review and update to ensure continued validity
- Comply with all civil rights laws and other applicable statutes, as specified in the *Guidelines for the Development, Recognition and Usage of Skill Standards*
- Include all of the elements required for TSSB recognition and are compiled in the TSSB's Skill Builder database format.

The following items must be submitted as part of the *Application for Skill Standards Recognition*. They are all available on the TSSB website at www.tssb.org. Click on the "Toolkit for Developing Skill Standards" button on the left side of the home page and see the Application and Completed Sample link. The link brings up a new page with a link to all of the blank forms and a completed sample application.

- Notification of Intent (NOI) - This should have been filed early on in the process as described in **Notification of Intent to the TSSB** on page 2.
- Cover letter to the TSSB Chair from the ITAC Chair, requesting recognition of the skill standards.
- *Application for Skill Standards Recognition* packet which includes the following:
    - Application Cover Page
    - *Rationale for Selection of Occupational Area* form
    - *Composition of the Industry Technical Advisory Committee (ITAC)* form
    - *Assumptions Related to Skill Standards* form
    - *Description of Skill Standards Development Process* form
    - *Review and Update Agreement* form
    - Two hard copies of the skill standards document; one electronic copy (.mdb file) generated from the TSSB Skill Builder database

Cover Letter

The Cover Letter is sent *from* the ITAC Chair *to* the TSSB Chair (contact the TSSB for this information). The letter formally requests that the TSSB recognize the skill standards at the next TSSB Board meeting. Refer to Appendix I for an example.

Application Cover Page

The Application Cover Page includes a Public Access and Storage agreement. The ITAC agrees that the skill standards will be public domain, and will be publicly available via the Skill Standards Repository on the TSSB website. Refer to Appendix E for an example.

In addition to the contact information about the ITAC and the indication of the occupational area, the Application Cover Page should also identify:

- The project director
- The category of recognition sought (Recognized or Conditionally Recognized)
- Signature of the ITAC Chair

Rationale for Selection of Occupational Area

Refer to Chapter 1 – Identifying the Occupation and Reviewing Resources for Relevant Information for information and instructions on how to complete this form. Refer to Appendix B for an example.

Composition of Industry Technical Advisory Committee (ITAC)

Refer to Chapter 2 – Assembling the Industry Technical Advisory Committee (ITAC) for information and instructions on how to complete this form. Refer to Appendix C for an example.

Assumptions Related to Skill Standards

Refer to Chapter 3 - Determining Existing Information Sources Pertinent to the Proposed Skill Standards for information and instructions on how to complete this form. Refer to Appendix D for an example.

Description of Skill Standards Development Process

Refer to Chapter 4 - Determining the Skill Standards Development Project Plan, Method of Job Analysis, and Strategy for Validation for information and instructions on how to complete this form. Refer to Appendix F for an example.

Review and Update Agreement

This is a commitment from the ITAC to review and update the skill standards as necessary to ensure their continued currency and relevance as described in Chapter 4. The Review and Update Agreement is signed by the ITAC Chair on behalf of the industry group. Refer to Appendix G for an example.

Receiving Recognition

Twice a year (typically in May and October) the TSSB holds a Board meeting at which new skill standards may be presented for consideration for recognition. There are three possible outcomes:

1. Recognized by the TSSB
2. Conditionally Recognized by the TSSB
3. No Grant of Recognition Awarded

Keeping in touch with the TSSB during the development process, and sending a preliminary copy of the skill standards to the TSSB for review and feedback well in advance of the May or October Board meeting at which the ITAC wishes to request recognition can help ensure a successful outcome.

Recognized by the TSSB

Skill standards that are submitted by a Texas industry group, that provide evidence of a Texas-wide development and validation process, and are in the TSSB required format will be awarded the category of "Recognized by the TSSB." In general, these are skill standards developed for occupational areas where no standards previously existed.

> ***TSSB Required Format*** The TSSB required format refers to the way the work- and worker-oriented information must be organized and presented with the Application for Skill Standards Recognition. The TSSB makes the TSSB Skill Builder database available to groups who are developing skill standards specifically for Texas recognition. After the work- and worker-oriented information has been developed, the developers enter the data into the Skill Builder database which compiles it into the format required by the TSSB, clearly indicating all of the essential elements that comprise a skill standard.

Conditionally Recognized by the TSSB

The TSSB's "Conditionally Recognized" category is granted to skill standards developed and validated outside of Texas. It is used to acknowledge skill standards developed in other states or nations by:

- The National Skill Standards Board and/or its Voluntary Partnerships
- A national industry group which is recognized by its constituent industry/business base
- Another state's skill standards authority
- A foreign country's skill standards authority.

Conditional recognition does *not* indicate a lesser or temporary status. Standards in both categories have been fully scrutinized and are valid, reliable, and representative of the work they describe. They must include essentially the same work- and worker-oriented information required by the Recognized category. They are granted conditional recognition because, although they must include the same work- and worker-oriented information required of the Recognized category, the elements may be presented in a format other than what is required of skill standards to be included in the Recognized category.

Further, conditional recognition allows the TSSB to build on work done in other states that may not be presented in TSSB required format, yet presents reliable and validated skill standards. Texas gets the benefit of an expanded list of recognized skill standards without the risk of duplicating efforts made by national industry groups.

No Category of Recognition Granted

In the event that skill standards do not meet all recognition criteria, the TSSB will not grant either category of recognition. TSSB staff will be available to provide comment on the skill standards and to work with the ITAC or industry group to develop a plan to ensure that all recognition criteria are met at the time of re-submission.

Chapter 1 – Identifying the Occupation and Reviewing Resources for Relevant Information

In order for the TSSB to formally recognize a skill standard, the ITAC must demonstrate a need for the standard. The objective at this stage is to demonstrate that the proposed skill standards will be broad-based and encompass multiple occupational titles and be accepted throughout the industry. The group must develop a rationale that will garner statewide industrial support and representation that is required, while generating data that will be used elsewhere in the process. The *Rationale for Selection of Occupational Area* form will help to establish rationale that will encourage representatives from throughout the target industry to join the effort.

Preparing the *Rationale for Selection of Occupational Area* Form

The *Rationale for Selection of Occupational Area* form contains information that is a justification to the TSSB as to why the ITAC chose this particular occupational area for skill standards development. Complete the form to include the following:

Occupational Area

The first step in the development of skill standards is to determine the occupational area on which the development effort will focus. The decision should be based on the following criteria:

- Does the occupational area encompass multiple occupational titles that are accepted throughout the industry in Texas?
- Are the occupational titles considered to be high-skill, high-wage? Do they have industry-wide significance and contribute, or will contribute, significantly to the health of the Texas economy?

The occupational area must be broad enough to encompass *multiple* occupational titles or a family of related jobs with similar purposes and functions in the industry. "Webmaster" and "Process Technician" are examples of occupational areas that encompass a multitude of related job titles.

Key Purpose of Occupational Area

The key purpose states the primary goal of the occupational area; it is generally stated as an action. When composing the key purpose statement, keep in mind that it must match the level of responsibility or skill for the sub-baccalaureate occupational area. For example, a key purpose might be: "Monitor and regulate chemical processes in a safe efficient environment." Another example of a key purpose is, "Diagnose, Service, and Repair heavy equipment." Carefully defining the key purpose is critical; the key purpose, in part, determines the scope of the occupational area the skill standards will encompass.

Related SOC (Standard Occupational Classification) Codes

The evaluation and definition of the various SOC titles and codes that are related to the occupational area determines the extent of skills and knowledge that the skill standard is intended to cover. This is a critical task that will assist the ITAC in developing a plan to gather and then validate the occupational skills and knowledge contained in the skill standards.

All SOC codes and their corresponding occupational titles related to the occupational area should be listed on the form. The website of the U.S. Department of Labor, Bureau of Labor Statistics contains current SOC codes, links to major groups, the complete standard occupational classification system hierarchical structure, broad occupational definitions, and detailed occupational definitions. In addition, the Texas Workforce Commission's SOCRATES (Standardized Occupational Components for Research and Analysis of Trends in Employment System) database contains employment and wage data for the more than 750 SOC code-related occupations.

For example, the Petro-Chemical occupational area may include the following SOC Codes and occupations:

SOC Code	Occupation
19-4036	Chemical Technicians
51-9011	Chemical Equipment Operators and Tenders
51-8091	Chemical Plant and System Operators
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers
53-7071	Gas Compressor and Gas Pumping Station Operators
51-8092	Gas Plant Operators

Information resources for related SOC codes and occupational titles include:

- Texas Workforce Commission (TWC) Labor Market and Career Information (LMCI).
- U.S. Bureau of Labor Statistics (BLS) – National statistics.
- U.S. Census Bureau's North American Industrial Classification System (NAICS) – NAICS replaced the old Standard Industrial Classification (SIC) system. Businesses using like processes to produce goods or services are grouped together and assigned a unique code. The NAICS website contains employer and industry information such as number of employees, number of establishments, payroll data, sales receipts, etc.
- TWC's SOCRATES database – Contains employment and wage data for more than 750 SOC code related occupations.
- Local Workforce Development Boards.

For many emerging occupational areas, SOC codes may not exist for the related job titles. In such cases, it is appropriate to use the closest acceptable SOC codes currently established.

TSSB Industry Sectors

An identifying industry sector for the skill standards occupational area must be listed on the *Rationale for Selection of the Occupational Area* form. The TSSB has defined 15 industry sectors within Texas. The ITAC must determine the industry sector to which the skill standards occupational area is most related. For example, a Chemical/Refining Process Technician corresponds to TSSB Sector 7, Manufacturing, Installation, and Repair.

The following is the list of TSSB-defined industry sectors from the *Guidelines for Development*:

Industry	Name and Description
1	**Agriculture, Forestry, and Fishing** Crop production, Animal production, Veterinary services, Forestry and Logging, Fishing, Hunting, Trapping, and Landscaping.
2	**Business and Administrative Services** Human Resources, Employment Services, Management Consulting Services, Marketing Research and Public Opinion Polling, Services to Buildings, Facilities Support Services, Accounting, Tax Preparation, Bookkeeping, Payroll Services, Administrative and Support Services; other Business Services including Event Planning.
3	**Construction** Building, Developing, and General Contracting including residential and non-residential; Heavy Construction including highways, bridges, tunnels, pipelines, industrial, non-building construction, etc.; Special Trade Contractors including Plumbing, Heating, Air Conditioning, Electricians, Carpentry, Painting, Roofing.
4	**Education and Training** Child care and preschool, Elementary education, Secondary education, Postsecondary education, Job training, Vocational rehabilitation
5	**Finance and Insurance** Credit Intermediation including Banking, Savings and Credit Union institutions; Credit Cards and Sales, Financing, Consumer Lending, Mortgage and Loan Brokering, Trade Financing, Secondary Market Financing, Securities, Commodity Contracts and related activities; Credit Bureaus and Collection Agencies, Insurance and Employee Benefit Funds including pension funds, Funds, Trusts, and related activities; Public Finance and Administration of Government Economic Programs.
6	**Health and Human Services** Ambulatory Health Care Services, Hospitals, Nursing and Residential Care Facilities, Human Services and Social Assistance including Elderly and Disabled Services, Children and Youth Services, Community and Housing, Emergency Relief; Administration of Government Human Services Programs.
7	**Manufacturing, Installation and Repair** Food and Beverages, Textiles and Textile Products, Apparel, Leather, Furniture, Wood, Paper, Printing, Petroleum, Coal products, Chemicals, Plastics and Rubber products, Non-metallic Minerals, including Glass, Concrete; Primary and Fabricated Metals, Machinery, Computers and Electronics products; Electrical Equipment and Appliances; Transportation Equipment, Installation, Repair, and Contract Maintenance.
8	**Mining** Oil and Gas Extraction; other mining.

Industry	Name and Description
9	**Public Administration, Legal and Protective Services** Executive, Legislative, and general Government Administration (Federal, State, and Local); Legal Services, Justice, Public Order, and Safety programs (Federal, State, and Local); Investigation and Security Services including Security Guards and Private Investigators.
10	**Restaurants, Lodging, Hospitality and Tourism, and Amusement and Recreation** Restaurants and Drinking establishments, Hotels and Motels, Travel Services, Tourism Services including Sightseeing Transportation, Amusement and Recreation.
11	**Retail Trade, Wholesale Trade, Real Estate and Personal Services** Retail Trade (except Restaurants), Non-store Retailing, Wholesale trade, Rental and Leasing Services, Real Estate; Personal Services including Beauticians, Laundry, and Private Household Services.
12	**Scientific and Technical Services** Scientific Research and Development Services, Architectural, Engineering and related services; Administration of Government Housing, Urban Planning and Community Development Programs, Space programs, National Security and International Affairs.
13	**Telecommunications, Computers, Arts and Entertainment, and Information** Telecommunications, Computers and Computer Services, Motion Pictures and Sound Recording, TV and Radio Broadcasting, Arts and Entertainment, specialized Design Services, Photographic Services, Advertising, Publishing, Information Services including News Services and Libraries.
14	**Transportation** Air, Rail, Water, Trucking, Transit and Ground Passenger, Pipelines, Transportation Support Activities, Postal Service, Couriers, and Messengers.
15	**Utilities and Environmental and Waste Management** Electric Power, Natural Gas Distribution, Water, Sewage, and other systems; Waste Management and Remediation, Environmental Consulting Services, Administration of Government Environmental Quality Programs.

The TSSB can provide guidance to help determine where, among the industry sectors, a proposed occupational area might most appropriately fit.

Importance to Economic Competitiveness

In this final section of the *Rationale for Selection of the Occupational Area* form, explain how the occupational area has or will have industry-wide significance, and how it contributes or will contribute to the Texas economy. The explanation must include specific labor market data like projected job growth, wages, worker shortages, and emerging industrial bases that support the choice

of the proposed occupational area. For example, in the following excerpt from the Chemical/Refining Process Technician skill standards application, statistics from SOCRATES are used as part of the justification:

> The petroleum industry is one of Texas' leading industries. Hence, the development of Skill Standards for Chemical and Refining Process Technicians is a natural focus for the states' Skill Standards efforts. In Texas' 28 Labor Workforce Development Areas (LWDA), chemical facilities and refineries dominate the coastal regions and are lightly scattered in other regions.
>
> The concentration of the industry in the Gulf Coast Region indicated the need for focus on companies in that locale. Over 95% of the refineries in the state are located in LWDA 28. According to SOCRATES data, the state's labor market information system, and to reports from industry spokespersons, employment for petroleum refinery and control panel operators will grow at 10% per year and shortages of qualified technicians has become a theme for conferences across the country.

Chapter 2 – Assembling the Industry Technical Advisory Committee (ITAC)

The Industry Technical Advisory Committee (ITAC) provides the leadership for the skill standards development. Formation of an effective ITAC is the foundation of the entire effort. It is common for a group or individual representing education or industry to generate the idea for a new skill standard; however, in order to formally develop skill standards under TSSB guidelines for recognition, an ITAC must be formed. There are various ways an ITAC can be assembled, including:

- Convened by an industry organization or alliance
- Organized by a group of employers within the industry
- Initiated by a training provider connected with a Local Workforce Development Board (LWDB)
- Facilitated by an educational institution like a community or technical college

Industry Representation

Validity of the skill standards is partially achieved through a valid ITAC composition. Industry representatives must constitute the majority of the ITAC membership. The ITAC must adequately represent the industrial sector to which the proposed occupational area. If possible, the majority of the ITAC membership should be Texas-based and should be representative of how the industry is geographically distributed throughout the state.

The ITAC Chair

The ITAC Chair must be an industry representative or employer. The ITAC Chair is often the same individual leading the skill standards effort. The ITAC Chair signs the NOI form, the cover page of the *Application for Skill Standards Recognition*, and the cover letter to the TSSB Chair requesting skill standards recognition.

Non-Industry Representation on the ITAC

To ensure that the potential workforce is represented, the ITAC should also include members from labor, credentialing, and related licensing groups within the occupational area. In addition, at least two members should be education and/or training providers.

Formation of a Skill Standards Development Team

The ITAC should form a skill standards development team that is separate from the ITAC. The development team should include a project director who will establish a development project plan and drive the project, and a job analyst who will conduct the data collection for skill standards and academic and employability knowledge and skills (AEKS) information. Other members of the development team should include individuals who will participate in the job analysis and data collection process, and individuals who will participate in the process of determining AEKS information.

Finalizing the ITAC

Before the composition of the ITAC is finalized, the ITAC Chair should verify the following:

- Is the ITAC representative of the industry in Texas?
- What would be the ramifications of one individual leaving the ITAC?
- Where appropriate, has labor representation been sought? Educational institutions? Accrediting bodies?
- Are all members of the ITAC prepared to take ownership for the content and the validity of the skill standards developed by the team?

Preparing the *ITAC Composition* Form

The *Application for Skill Standards Recognition* must include *the ITAC Composition* form. This form includes the list of the ITAC members, the organization each represents, the size of the organization (if it is a business), and the organization's geographic location.

ITAC Members - List below the ITAC members, titles/positions, and organizational affiliations. For industry representatives, indicate the size of employing company and city where located. If the ITAC member is representing a company with branches throughout the state, indicate "Statewide" in the city column.

Member	Organization	Size	Location
Ames, Steve	ExxonMobil	3	Baytown, TX
Arevalos, Johnny	Valero Refining Company	4	Corpus Christi, TX

Organization Size

This field is only for business members, not education or training providers. The number itself is not the actual number of employees. Rather, it is a size category representing the total number of employees in the company. For example, '3' would indicate a company size of 100-400 employees. Refer to the ITAC Composition form for a complete list of size categories.

Location

If the ITAC member is representing company locations throughout the state of Texas, indicate "Statewide"; otherwise, list the geographic location in which the company operates.

Justification of ITAC

Following the membership table, the *ITAC Composition* form contains three additional sections for completion. Together they make up a justification of the ITAC.

The first section requests a short explanation of how the ITAC membership is representative of the occupational area. Describe how the ITAC includes industry-wide representation, or indicate how the requirement for balanced representation will be met.

The second section requests confirmation that the ITAC membership includes representatives of labor and licensing authorities for occupations in industries where labor involvement and/or a credentialing or licensing authority is affiliated.

The third section requests information about education and training provider representation on the ITAC.

The following is an example of an ITAC justification from the Chemical/Refining Process Technician skill standards initiative. Each paragraph is associated with the first, second, and third sections, respectively.

All major chemical and refining employers in Texas are represented on the ITAC. No single employer dominates the ITAC.

Representatives of Labor and Licensing authorities are members of the ITAC. Participation in the skill standards process was extensive by companies with labor unions. Refinery operators in Texas are largely represented by a formal labor organization, PACE. The acceptance of the Skill Standards effort by technicians who are members of this group was critical to the project's success.

Education and training entities are represented on the committee. Texas' colleges and universities offering two-year degree programs in process technology are partners with the Gulf Coast Process Technology Alliance and Center for the Advancement of Process Technology. Together, these partners develop curriculum and are working on an assessment for program graduates. Faculty workshops, internships and curriculum revisions are supported by GCPTA and CAPT. CAPT is a National Science Foundation Center of Excellence.

Chapter 3 – Determining Existing Information Sources Pertinent to the Proposed Skill Standards

The development team must ensure that it is forming a "future oriented" skill standard, making the greatest use of research previously performed external to the ITAC. The output of this stage of the development process will include a summary of identified research and a draft of the initial *Assumptions Related to the Standards* form, which is included as Appendix D.

Perform Review of all Relevant Information

The development team should conduct sufficient research to ensure that, to the maximum extent possible, available job analysis methods and other published materials relevant to this effort are identified and reviewed.

Generate Summary of Identified Research for ITAC Review

This step ensures that the outcomes of the review of relevant information are systematically cataloged and provided to the ITAC for review. ITAC members may know of other job analysis methods, publications, or information resources that could be included for consideration. Additionally, if the ITAC members have the opportunity to review the resources, they will be better informed and capable of developing preliminary assumptions regarding the development effort.

Generate a Preliminary List of Assumptions Related to the Effort

As part of the *Application for Skill Standards Recognition*, the ITAC and its development team must generate a list of assumptions upon which the development of the skill standards is based. This provides a basis for skill standards data reliability and validity verification.

The preliminary list of assumptions may include, but are not limited to, the following:

- Assumptions about the duties of the ITAC and its development team
- Assumptions about the industry and/or regulatory groups that will provide assistance and/or information
- An assumption that there is sufficient time, funding and other resources available to complete the effort

As the skill standards development progresses, it is likely more assumptions will be identified. The development team should document the process and ensure that newly developed assumptions are added to the preliminary list. When the *Application for Skill Standards Recognition* is submitted it must include all assumptions made during the development process.

Chapter 4 – Determining the Skill Standards Development Project Plan, Method of Job Analysis, and Strategy for Validation

Although it is not required by the TSSB, it is strongly recommended that the ITAC and its development team establish a project plan for the development of the skill standards. In this critical planning phase, the ITAC should determine parameters such as project scope and activities, resource requirements (personnel, equipment, supplies), timelines, assumptions, and specific project deliverables.

Note

It is assumed that the project director, as the leader of the development team, has knowledge of project management and is able to apply project management skills to the effort.

Defining Resources, Tasks and Timelines

The following considerations may be helpful in determining the overall project scope:

- What are the expected outcomes of the project?
- What type of industry and employees will be affected?
- Will the project also create an assessment and certification system?

Once the scope is established, the development team should create a list of activities required to complete the skill standards project, including, at a minimum: timelines, anticipated date of completion, anticipated date of submission to TSSB, resource requirements and costs, and any dependencies.

Choosing a Job Analysis Method and Engaging a Job Analyst

The TSSB requires the use of a recognized job analysis method to collect the raw data for the skill standards. The job analysis must generate information that is broad and flexible enough to accommodate changing workplace requirements, while specific enough to be useful to employers. The job analysis method is critical for demonstrating procedural validity and establishing the content validity of the skill standards.

The TSSB does not endorse one particular method; many different forms of job analysis exist. Any job analysis method that can substantiate both content validity and reliability may be used. The *Guidelines for Development* lists several different job analysis methods.

The TSSB requires the engagement of a qualified (experienced and skilled) work or job analyst to conduct the skill standards development process. The job analyst will manage and/or perform the analysis and data collection process, and work with the development team to define the critical work functions, key activities, and performance criteria from the raw data. The job analyst should determine which method is most appropriate and may draw from the following:

- *Functional Job Analysis*; Sydney Fine
- *Critical Incident Technique*; John Flanders
- *Position Analysis Questionnaire*; Ernest McCormack & Associate, Purdue University
- *DACUM (Developing a Curriculum)* including modified DACUM and SCID (System Curriculum and Instructional Development) , as refined by Dr. R. Norton at Ohio State University
- *Job-Task Inventory (CODAP) and the Extended Search)*; Dr. R. Crystal for the U.S. Air Force.

Skill standards presented to the TSSB for recognition must meet the following criteria with regard to process and job analysis method in order to be recognized by the TSSB:

- The development process is procedurally valid and engages appropriate occupational subject matter experts, management, labor, job incumbents, related licensing or certification agents if applicable, and other interested stakeholders in the development of the skill standards.
- The stakeholders engaged in skill standards development and validation are representative of the broad occupational base for which the skill standards are being developed with regard to organization size and geographic and demographic diversity.
- The job analysis method uses a process that identifies both work- and worker-oriented information, including critical work functions; key activities; performance criteria; occupational skills, knowledge, and conditions; a rating of academic and employment knowledge and skills (AEKS); and statements about how best to assess a worker's level of competency in a particular work function.
- The skill standards work-oriented information resulting from the development process is subjected to a rigorous Texas industry-wide validation to ensure content validity.
- The skill standards do not contravene any applicable federal, state, or local statutes, including the Equal Employment Opportunity Act (as amended) and the Americans with Disabilities Act (1990).

Subject Matter Experts (SMEs)

The development team is responsible for identifying SMEs to participate in data collection and data validation. SMEs' qualification requirements vary depending on the role they play in the development of the skill standards. The table below suggests the different types of SMEs involved in the development effort.

SME Role	Ideal Number	Qualifications
Development of work- related information and occupational skills and knowledge	10 or more	• Have three (3) or more years experience in the occupational area, and/or • Be a first line supervisor with at least one (1) year of experience supervising employees in the occupational area, and/or
Validation of work-oriented information	Based on occupational area's size (in number of workers) and geographic distribution.	• Same as above
Development of Academic and Employability Knowledge and Skills (AEKS) information (more fully described in Appendix H)	3-5, 7-10 where possible	• Five (5) or more years of experience in the occupational area **or** 1st line supervisor with at least three (3) years of supervising employees in the occupational area • Experience in training employees in the occupational area is desirable

Choosing a Data Validation Strategy for Work-Oriented Information

The development team is free to choose its own data validation strategy; however, data validation should be performed in accordance with the job analysis method used for data collection. Validation ensures that:

- Skill standards resulting from the data are representative of all Texas-based employers in that occupational area, not a subset.
- Work-oriented information resulting from the data is representative of the broad occupational area of the skill standards, not a subset of jobs in that occupational area.
- The skill standards' content validity is established and confirmed.

Methods of validation include surveys, focus groups, and SME reviews. The validation process requires that:

- SMEs who are involved in the validation process are adequately qualified, typically with three or more years of experience in the occupational area.
- Where a survey or focus group is used, the respondents sampled adequately represent the occupational area, and
- There is an adequate number of respondents for a statistically valid population.

The ITAC is also responsible for reviewing the data to ensure content validity and adequate representation of the occupational area.

Preparing the *Description of the Skill Standards Development Process* Form

The TSSB requires that the skill standards development process be fully documented and described. As part of the *Application for Skill Standards Recognition*, the development team must include the *Description of Skill Standards Development Process* form which requires descriptions of the chosen job analysis method and the validation strategy. The form also requires a summary of any conflicting ideas, objections, or differences that arose during the development process and a statement of how the team addressed and resolved the issues to reach a conclusion which gave all participants in the process the opportunity to have input and influence the outcome.

Signing the *Review and Update Agreement*

Skill standards require review and update in order to remain relevant and current. The TSSB requires that the ITAC commit to review, and if necessary update, skill standards when there are substantive changes to the work-oriented information. As part of the *Application for Skill Standards Recognition*, the ITAC must include the *Review and Update Agreement* form, signed by the Chair, which states the group's commitment to review, and as necessary update, the skill standards and submit any updates to the TSSB.

Chapter 5 – Developing Work-Oriented Information

The real work of the development effort begins with the next steps: developing work- and worker-oriented information to include the seven elements required for skill standards recognition in Texas. The outcome of the Texas-based development effort must address all seven elements and be organized in TSSB required format (described on page 5) in order to be considered for TSSB recognition. The seven elements are:

Element 1 – Critical Work Functions
Element 2 – Key Activities
Element 3 – Performance Criteria
Element 4 – Occupational Knowledge Skills, and Conditions
Element 5 – Academic Knowledge and Skills
Element 6 – Employability Knowledge and Skills
Element 7 – Statements of Assessment

During the development of work-oriented information, it is very important that the development team focus on describing the work to be performed, not on the work*er* skills required to perform the work. Work-oriented data, as defined in the *Guidelines for Development* is:

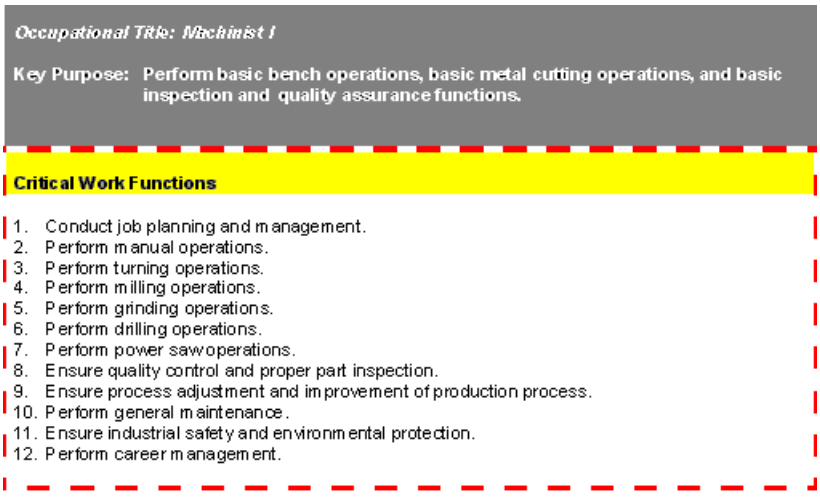
> "Information that describes work by the characteristics of the work to be done, encompassing the essential characteristics of critical work functions, key activities, and performance criteria. Products or services produced are included in work-oriented information."

Skill standards resulting from the raw, work-oriented data must accurately describe the work to be performed; if the data is faulty, it will be impossible to properly develop the work*er*-oriented elements of the skill standards. The "work-oriented" elements of skill standards are:

- Element 1 - Critical Work Functions – The principal duties required to carry out the job. For example, "*Perform milling operations*."
- Element 2 - Key Activities – The major tasks required to carry out the critical work functions. For example, "*Press holes and perform press fits*."
- Element 3 - Performance Criteria – The standards that indicate how to determine if a key activity is performed competently. For example, "*Arbor presses are used to perform press fits*."

Element 1 – Defining Critical Work Functions

First, skill standards break down an occupation into its principal responsibilities or critical work functions (CWFs). CWFs should identify the highest or broadest level in the hierarchy of work responsibilities; these are the work functions required to accomplish the Key Purpose of the occupation as it is defined in the *Rationale for Selection of Occupational Area* form.

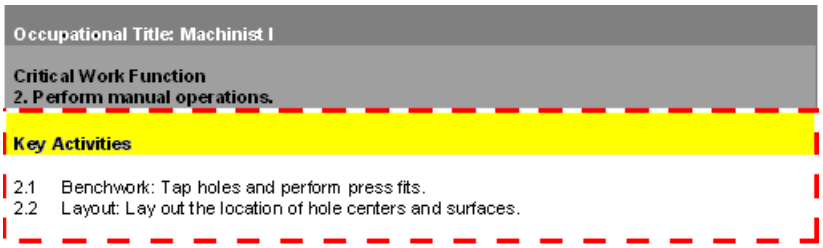


When defining CWFs from raw data, keep in mind that:

- There are usually 10-15 CWFs within a skill standard.
- CWFs should begin with an action verb; for example: "*Perform quality control and inspection functions*."

Element 2 – Defining Key Activities

To accomplish each CWF, a worker must perform several sub-steps or tasks in sequence. The relationship between CWFs and key activities is one-to-many: One CWF contains many key activities.



A key activity is typically written as a *behavioral* statement with an action verb. For example, "*Inspect sample parts and prepare reports on parts compliance*" would be a key activity.

When defining key activities from raw data, keep in mind that there are usually 3-6 key activities per CWF. This may require aggregation of tasks or the addition of a CWF that more accurately categorizes the activities.

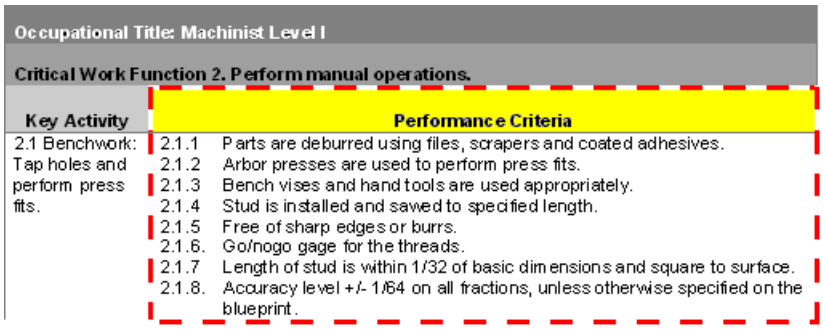
Element 3 – Establishing Performance Criteria for Key Activities

What does successful performance of a key activity look like? To what standards must workers perform? How good is good enough? These questions are addressed with the third element of skill standards: the performance criteria. Performance criteria specify the type, quality, and level of output (demonstrable behavior or product) required to successfully perform the key activity.

The number of performance criteria for any key activity is dependent upon what the SMEs feel is necessary in order to demonstrate the desired level of proficiency. Performance criteria are critical in that they serve as a benchmark for assessment of performance of the key activity. Also, note that the performance criteria must be demonstrable.

The intent of performance criteria is to give a complete picture of how employers define competent performance. Performance criteria describe *how* the activity would look, when competently performed; they *measure the work, not the worker*. For example, "*Using precision tools and techniques*" would be a performance criterion because it specifies *how* and/or at what level the work must be performed.

In the example below, eight performance criteria indicate the standards to which a Machinist must perform key activity 2.1. The relationship between key activities and performance criteria is one to many: one key activity has multiple performance criteria.



Occupational Title: Machinist Level I	
Critical Work Function 2. Perform manual operations.	
Key Activity	**Performance Criteria**
2.1 Benchwork: Tap holes and perform press fits.	2.1.1 Parts are deburred using files, scrapers and coated adhesives. 2.1.2 Arbor presses are used to perform press fits. 2.1.3 Bench vises and hand tools are used appropriately. 2.1.4 Stud is installed and sawed to specified length. 2.1.5 Free of sharp edges or burrs. 2.1.6. Go/nogo gage for the threads. 2.1.7 Length of stud is within 1/32 of basic dimensions and square to surface. 2.1.8. Accuracy level +/- 1/64 on all fractions, unless otherwise specified on the blueprint.

Validation of Work-Oriented Data

A critical step in the development process is the validation of the work-oriented information. The critical work functions identified by the job analyst and SMEs, along with the relevant key activities and performance criteria, must be subjected to a process that determines that the content is valid, that the work-related information (the critical work functions, the key activities, and the performance criteria) contained in the skill standards is representative of the work that would be required of someone employed in the occupational area.

Content validity can be established through a variety of methods and sampling procedures. Typically, a survey is administered to supervisors and/or those with training responsibilities. Alternatively, multiple focus groups may be used. The members of these groups must be the same as those that could participate in a validation survey.

Whatever method is chosen, the job analyst should document the process in detail, including the number, qualifications, experience, company, and location of the SMEs consulted to confirm content validity. The sampling must be consistent with the diversity of businesses and locations used to establish the ITAC and with the rationale for the selection of the occupational area. Too narrow a sample (all large companies or from only two geographic locations) or too few SMEs in the sample will fail to meet the TSSB requirement. The TSSB can assist the job analyst if there are questions regarding the procedural requirements.

Chapter 6 – Developing Worker-Oriented Information and Statements of Assessment

While work-oriented information describes the job tasks and activities, work*er*-oriented information details the knowledge, skills, and conditions required to competently perform that work. The "work*er*-oriented" elements of skill standards are:

- Occupational Skills, Knowledge and Conditions – Technical skills and knowledge specific to the occupation like reading blueprints, knowledge of graphic design, combined with the tools, equipment and resources (i.e. drums, hoses, compressors, etc.) required to perform the work.

- Academic and Employability Knowledge and Skills (AEKS) Data, which combines two elements:
  - Academic Knowledge and Skills – The four (4) basic knowledge areas of reading, writing, mathematics, and science.
  - Employability Knowledge and Skills – Thirteen (13) applied skills like listening, speaking, and working in teams.

Element 4 – Defining Occupational Skills, Knowledge and Conditions

For each key activity, the occupational skills, knowledge and conditions required to competently perform that activity must be defined. The relationship between key activities and occupational skills, knowledge, and conditions is one to many: one key activity typically has multiple occupational skills and knowledge sets, and multiple conditions.

Occupational Title: Machinist I			
Critical Work Function 2. Perform manual operations.		**Occupational Skills, Knowledge & Conditions**	
Key Activity	**Performance Criteria**	**Occupational Skills & Knowledge**	**Conditions**
2.1 Benchwork: Tap holes and perform press fits.	2.1.1 Parts are deburred using files, scrapers and coated adhesives. 2.1.2 Arbor presses are used to perform press fits....	• Interpret standard orthographic blueprints. • Recognize and apply basic measurement instruments. • Understand and apply metalworking theory including cutting theory, tooling, material properties, and cutting fluids and coolants.	A process plan, blueprint, access to hand tools including taps, micrometer, hacksaw, files, and scrapers, a newly machined part with holes prepared for tapping, a hole prepared for the press fit of a bushing, and a stud for one tapped hole.

Occupational skills and knowledge are *occupation-specific* skills and knowledge. Like key activities, these statements begin with an action; for example, "*Interpret standard orthographic blueprints*."

Conditions are a list of tools, equipment, and resources required to perform the work. These are things a worker must have available in order to accomplish the Key Activities. This should include specific tools and/or parts like "*Hacksaw*" or "*Newly machined part with holes prepared for tapping*," and general resources like "*Access to hand tools*" or "*Access to Personal computer*." Conditions should also include necessary resources like "*Process Plan*," "*Appropriate OSHA, DOT,*

and EPA manuals", "*Guidelines of local building and energy safety codes*" and "*Company guidelines*."

Elements 5 and 6 – Defining Academic and Employability Knowledge and Skills

For each critical work function (CWF), academic and employability knowledge and skills (AEKS) required to competently perform the work must be defined. (AEKS is similar to the Secretary's Commission on Achieving Necessary Skills (SCANS) competencies that community and technical colleges are required to use in their technical programs.) AEKS uses a common nomenclature developed by the National Skill Standards Board (NSSB) and adopted by the Texas Skill Standards Board (TSSB). There are four (4) academic and thirteen (13) employability knowledge and skills for a total of seventeen (17) areas:

Academic Knowledge and Skills	
Mathematics	Reading
Science	Writing
Employability Knowledge and Skills	
Adaptability	Organizing and Planning
Analyzing and Solving Problems	Self and Career Development
Building Consensus	Speaking
Gathering and Analyzing Information	Using Information and Communications Technology
Leading Others	Using Social Skills
Listening	Working in Teams
Making Decisions and Judgments	

The AEKS Development Process

Prior to the start of the skill standards development process, the TSSB will provide the development team with the *AEKS Requirements* document and the *Skill Scales Companion Guide*, a publication of the NSSB, which provides detailed information on each AEKS area and ratings. It is the primary resource when determining applicable AEKS areas and ratings for each CWF.

Further, TSSB staff will be available to meet with development teams in order to provide support on the development of academic and employability knowledge and skills.

The development of academic and employability knowledge and skills must be performed as described in TSSB's *AEKS Requirements* document by qualified subject matter experts (SMEs), using the NSSB's *Skills Scales Companion Guide* as a reference. The *AEKS Requirements* document is included as Appendix H.

Element 7 – Constructing Statements of Assessment

In the final step of skill standards development, the development team should consult the ITAC and compose a statement of assessment for each of the critical work functions (CWFs).

The statement of assessment is a vehicle to suggest how the industry might determine the competency a worker has attained. For instance, a worker's competency could be assessed through a written exam, through demonstrating a solution to a typical workplace challenge, or through preparing and delivering a presentation on a workplace topic. This requirement gives the ITAC the opportunity to define any of several things:

- Define how industry should assess the level of competency a worker has attained in a particular CWF based on the performance criteria for all of the key activities associated with that CWF
- Define for trainers and educators how to assess the level of competency a student has attained relevant to a CWF and its associated key activities.
- Define the level of mastery of CWFs that indicates that a worker or student has achieved entry-level competency, intermediate-level competency, or an advanced level of competency.

Note

- Statements of Assessment must not intentionally exclude any type of person, or be biased based on race, national origin, religious affiliation, age, or disability.

Chapter 7 – Synthesizing and Organizing Data

After the work-oriented information has been collected and validated, and the worker-oriented information collected, the data must be organized.

For TSSB recognition of skill standards developed by a Texas-based development effort, the development team must compile all of the final data into the TSSB Skill Builder database, which will organize and format the data into the TSSB required format for submission to the TSSB.

Requesting a Copy of the Skill Builder Database

Please call the TSSB at 512/936-8100, or contact your TSSB contact directly to request a copy of the Skill Builder database. The TSSB will send a CD containing the Skill Builder Database program, which requires that the user have a licensed copy of Microsoft® Access® v. 2000 or later.

Skill Builder Database Installation

To install the TSSB Skill Builder program:

- Copy the empty database file [SkillBuilderDatabase-Empty(2000).mdb] to your working drive/directory. Keep the CD as a backup copy of the empty database file.

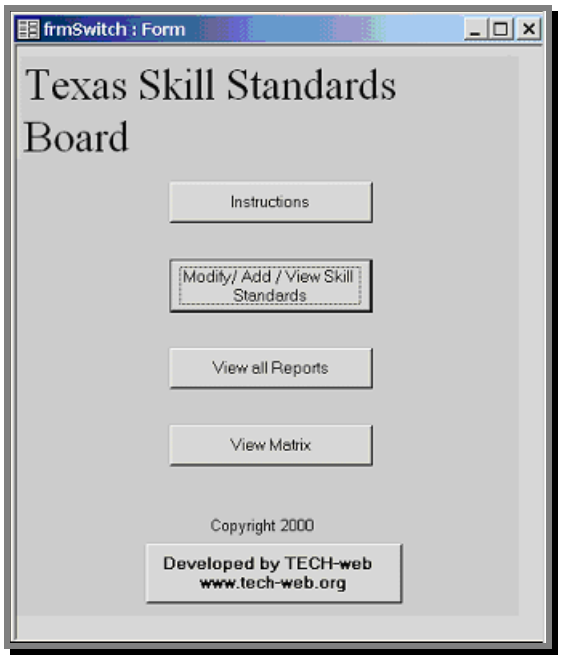
- To open the database, double-click on the file name. If you receive an error that a library file is missing, contact the TSSB for technical assistance.

- It is recommended that the person responsible for data entry become familiar with the database prior to data entry. The TSSB can provide technical assistance.

- Once the initial data entry is complete, contact the TSSB to schedule a preliminary review of the skill standards, prior to the submission of the final standard with the *Application for Skill Standards Recognition* package.

Opening the Database

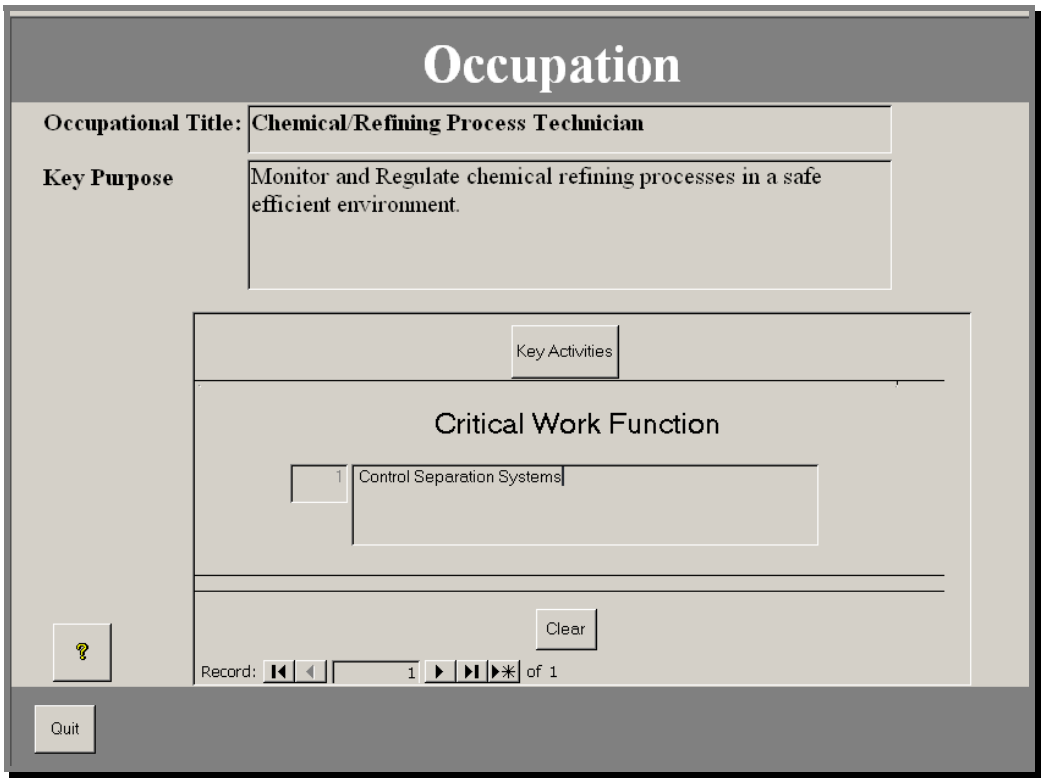
Double-click on the file name to open the database. The main form appears.



- To proceed with Data Entry, click **Modify/Add/View Skill Standards**. You can use the Copy/Paste feature to enter the data if you have already stored the data in another program like Microsoft®Word®.
- To view a report (in TSSB Skill Standards format) of all data entered into the database, click **View All Reports**.
- To view (in TSSB Skill Standards format) all AEKS data entered into the database, click **View Matrix**.
- To exit the database, click on the Close Window button.

Entering Critical Work Functions (CWF)

1. Open the database.
2. Click **Modify/Add/View Skill Standards**. The Occupation form appears.



3. Select (Left-Click) the data entry field next to **Occupational Title**, and enter the Title text. The **Occupational Title** will now appear above every **CWF**.
4. Select the data entry field next to **Key Purpose,** and enter the Purpose. The **Key Purpose** will also appear above every **CWF**.
5. Select the data entry field *under* **Critical Work Function** (*not* in the number field to the left), and enter the data for the first CWF.
    - The **0** will change to a **1** when the first CWF is entered
    - CWFs are numbered automatically as new CWFs are entered.
6. Click the ▶ button. A second CWF record is created.
7. Enter the next **CWF**. Repeat steps 5-6 until all CWFs for the skill standards have been entered.
8. Click **Quit** to exit and save your work, or proceed to entering Key Activities.

Tips:

- Data may be manually typed, or entered using the Access® menu commands **Edit**, **Paste** if data has already been entered in another Microsoft®Office®-compatible program.

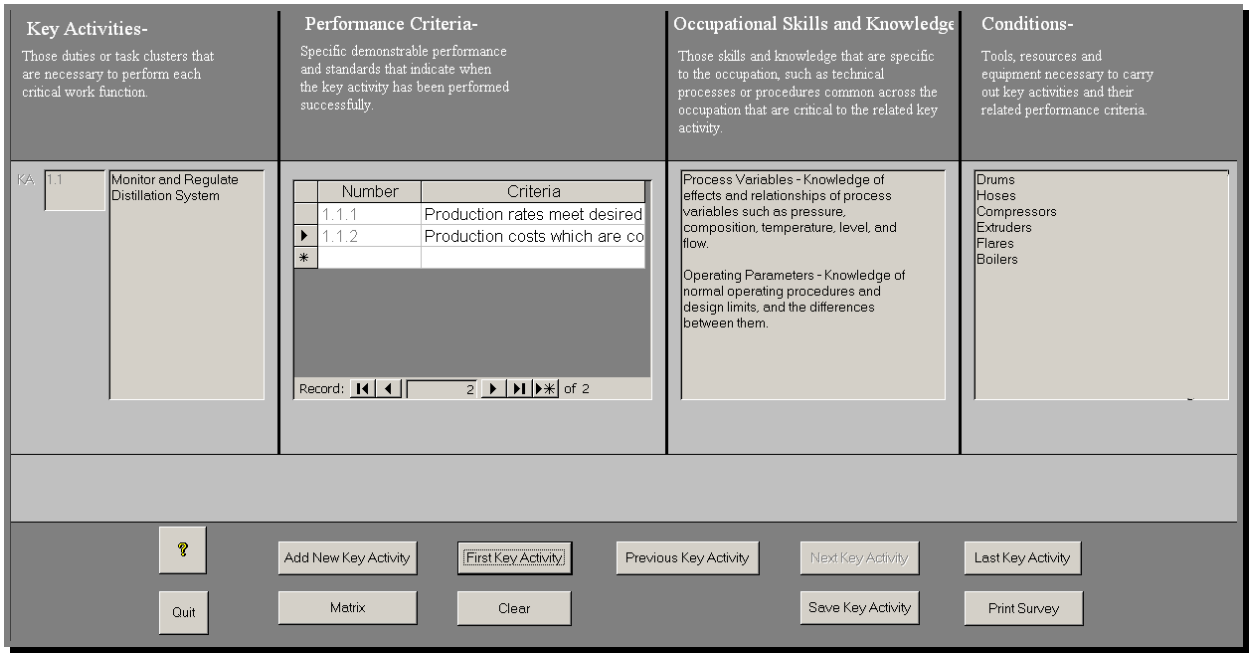
- The **Clear** button only erases the text in the CWF text field; the CWF record will not be deleted. To delete text in the **Key Activities** or **CWF** fields, highlight the text and press the

Delete key, or select **Edit**, **Cut** from the Access® menu.

- Use the radio buttons to navigate through existing **CWF**s:
  - Click ▶| to move forward to the next CWF.
  - Click ◀ to move back one CWF.
  - Click ▶▶| to go to the last CWF.
  - Click |◀◀ to go to the first CWF.

Entering Key Activities and Occupational Skills, Knowledge and Conditions

1. Open the database and using the radio buttons, navigate to the first CWF (or to the CWF for which you want to enter Key Activities).
2. Click **Key Activities**.

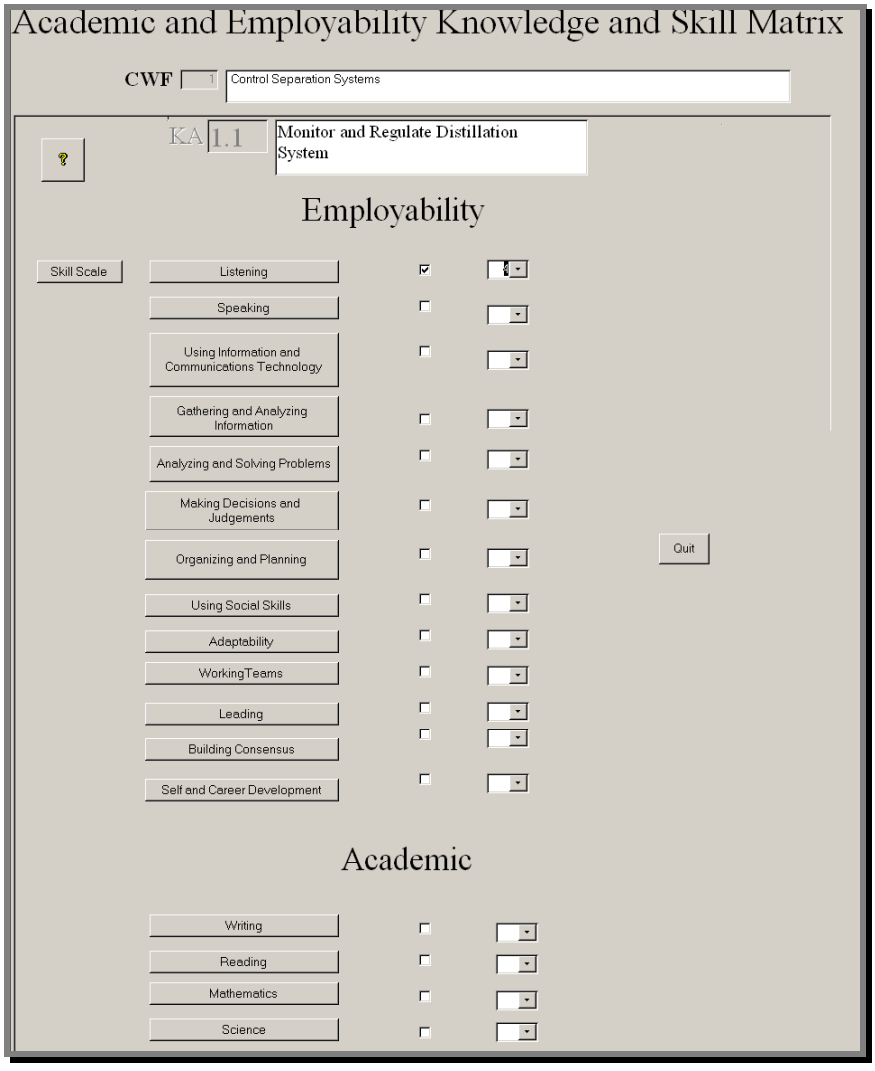


3. Select (Left-Click) the data entry field under **Key Activities** (*not* in the number field to the left) and enter the data for the first Key Activity; these numbered automatically as you enter new Activities.
4. Select the first blank **Criteria** row under **Performance Criteria** (*not* the Number column), and enter the Performance Criteria for the Key Activity; these are also numbered automatically.
5. Click ▶| to move forward to the next Performance Criteria row. Repeat Steps 4-5 until all the Performance Criteria for this Key Activity have been entered.
6. Select the data entry field under **Occupational Skills and Knowledge**, and enter the Occupational Skills and Knowledge data for the Key Activity.
7. Select the data entry field under **Conditions**, and enter Conditions data for the Key Activity.
8. Click **Save Key Activity**, then click **Quit** to exit and save your work, or proceed to entering AEKS data.

Entering AEKS Data for Critical Work Functions

Reminder: AEKS data is only entered for each Critical Work Function, *not* each Key Activity. The program was originally constructed to require that the user have AEKS data for each Key Activity. It is now only required that the user enter AEKS data once for each CWF,

1. Open the database and using the radio buttons, navigate to the first CWF (or to the CWF for which you want to enter AEKS data).
2. Click **Key Activities**.
3. Click **Matrix**. The AEKS form appears.
    - The current CWF (and Key Activity although this is no longer applicable) is displayed at the top of the form.
    - You may need to use the scroll bars to see all fields, depending on your screen resolution settings.

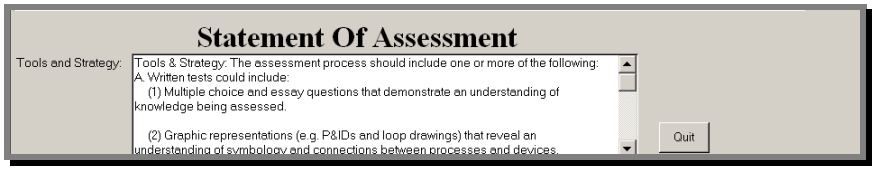


4. For each **Employability** and **Academic** skill that applies to the current CWF, left-click the checkbox next to that skill. A √ will appear in the checkbox to indicate it has been selected. To uncheck the box, left-click the checkbox again.
5. For each checked skill, select the **Rating** level by left-clicking the arrow in the drop-down box (next to the checkbox), and clicking on the appropriate number.
6. Click **Quit** to save the data and return to the Key Activity form.
7. Click **Save Key Activity**, then click **Quit** to return to the CWF form.
8. Select the next CWF and repeat Steps 2- 7 until you have finished entering AEKS data for each CWF.

Entering the Statement of Assessment into the TSSB Skill Builder Database.

Note: Statements of Assessment apply to a CWF, not to a specific Key Activity. The Statement must encompass *all* Key Activities within the CWF.

1. Open the database and navigate to the first CWF.
2. Click **Key Activities**.
3. Click **Matrix.**
4. Scroll down until you can see the Statement of Assessment field.



5. Select the text field, and enter the Statement of Assessment. This will automatically be displayed for *any* Key Activity within the current CWF.
6. Click **Quit** to save the data and return to the Key Activity form.
7. Click **Save Key Activity**, then click **Quit** to return to the CWF form.
8. Navigate to the next CWF. Repeat Steps 2-7 until a Statement of Assessment has been entered for every CWF.

Tips:

- There is no **Clear** button for erasing the text in the Statement of Assessment; select the data and press the **Delete** key, or select **Edit**, **Cut** from the Access® menu.

Sending the Database to the TSSB for Review

Once data entry is complete, a preliminary copy should be sent to the TSSB for review to ensure the skill standard is complete and properly formatted before the *Application for Skill Standards Recognition* is submitted. The copy can be sent electronically.

Please contact the TSSB before sending the file.

Chapter 8 – Submitting the Application for Recognition

The following items must be submitted as part of the *Application for Skill Standards Recognition*. Each of the forms is described in the section titled Introduction to the TSSB Skill Standards Development User's Guide beginning on page 1.

- Notification of Intent (NOI) - This should have been filed early on in the process as described in **Notification of Intent to the TSSB** on page 2.
- Cover letter to the TSSB Chair from the ITAC Chair, requesting recognition of the skill standards.
- *Application for Skill Standards Recognition* packet which includes the following:

    - Application Cover Page
    - *Rationale for Selection of Occupational Area* form
    - *Composition of the Industry Technical Advisory Committee (ITAC)* form
    - *Assumptions Related to Skill Standards* form
    - *Description of Skill Standards Development Process* form
    - *Review and Update Plan* form
    - Two hard copies of the Skill Standards; one electronic copy (.mdb file) generated from the TSSB Skill Builder Database

Send the completed package to the TSSB for consideration well in advance of a regularly scheduled Board meeting, which typically takes place in May and October each year.

Appendix A – Notification of Intent To Develop Skill Standards

Instructions: Complete and submit a separate Notification of Intent to Develop Skill Standards form for each occupation for which skill standards are being developed.

Texas Skill Standards Board Use Only
Date Received: _____
Logged in By: _____

Name of Industry Technical Advisory Committee (ITAC) or industry stakeholder group:

_____

Mailing Address:

_____

Street or P.O. Box City State Zip

Project Director or Contact Person:

_____

Name Phone # Fax # E-mail

Occupation for which skill standards are being developed: _____

Anticipated Date of Skill Standards Submission for Texas Skill Standards Board (TSSB) Recognition:

_____

Month Year

The signature of the industry representative named below indicates that the industry group: 1) intends to develop skill standards for TSSB recognition; and 2) understands that, in order to receive TSSB recognition, the skill standards must adhere to all recognition requirements contained in the *TSSB Guidelines for Development, Recognition and Usage of Skill Standards*.

_____

Leader, Industry Group (Typed Name and Title)

_____

Signature of Industry Leader Date

Mail this completed form to: Texas Skill Standards Board, P.O. Box 2241, Austin, TX 78768-2241

TEXAS SKILL STANDARDS BOARD USE ONLY

_____ Initial Contact Made: _____ Initials/Date	Comments: _____ _____
_____ Copy of Guidelines Provided: _____ Database User Agreement Signed _____ Skill Scales Training Completed _____ Initials/Date	Comments: _____ _____ _____
_____ Guidelines Presentation Given: _____ Initials/Date	Comments: _____ _____

Appendix B – Rationale for Selection of Occupational Area

Submission Requirement: 1) Title and key purpose of target occupational area; 2) list of related Standard Occupational Classification (SOC) job titles and codes; 3) linkage to a TSSB-recognized industry sector; and 4) explanation of importance to economic competitiveness of State of Texas through supporting labor market data.

Instructions:

Occupational Title -- State the title of the occupational area for which the skill standards are being developed. The occupational area is not a job title. Rather, it should represent a "family" of jobs across the industry with similar purposes and functions.

_____

Key Purpose of Occupational Area - State the key purpose of the occupational area summarizing its primary goal. (Should be one sentence beginning with an action verb.)

_____
_____
_____

Related SOC Job Titles and Codes - List all the related SOC job titles and associated 6-digit code numbers encompassed within the occupational area. *

Code	SOC Job Title	Code	SOC Job Title
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

TSSB Industry Sector - Indicate the TSSB industry sector and number (see Key on page 8 of the Guidelines) under which the occupational area belongs.

Code	Sector Title
_____	_____

Importance to Economic Competitiveness of Texas - Provide an explanation of the occupational area's importance to the economic competitiveness of Texas. Cite specific labor market data, such as projected job growth, number of employment openings, wage/earning indicators, skill shortages and/or emerging industrial base, which supports the ITAC's choice. (Attach additional sheets of paper.)

* SOC job titles and codes may be obtained from the US Department of Labor website.

Appendix C – Industrial Technical Advisory Committee (ITAC) Composition

Submission Requirement: A list of ITAC members and their affiliations with majority industry representation and an explanation that the group is representative of the composition of employers within the industry or occupational area by size of company, geographic location in the state, and business diversity.

Instructions:

ITAC Members - List below the ITAC members, titles/positions, and organizational affiliations. For industry representatives, indicate the size of employing company and city where located. If the ITAC member is representing a company with branches throughout the state, indicate "Statewide" in the city column.

Member	Title/Position	Organization	Size*	City

***Key to Company Size** (by number of employees): Indicate 1 - Micro (1 to 20 employees); 2 - Small (21 to 99 employees); 3 - Medium (100 to 499 employees); or 4 - Large (500 employees and above). Note: Size refers only to businesses. Do not note size of education and training providers.

Industry Technical Advisory Committee (ITAC) Composition

Instructions (continued):

Industry-Wide Representation - Provide an explanation of how the ITAC membership is representative of employers within the industry. If a major employer in the industry is not included on the ITAC, explain how the requirement of inclusivity has been met. If the ITAC is dominated by any one company size, geographic location, or business interest, explain how the requirement of balance of interests within the industry has been met.

Labor and Licensing/Credentialing Representation - The *Guidelines* strongly suggest that in industries where labor involvement and/or a credentialing or licensing authority is affiliated with an occupational area, representatives of those groups be included on the ITAC. If labor and/or a credentialing/licensing body is not included on the ITAC, provide an explanation as to why.

Education and Training Provider Representation - The *Guidelines* recommend two "best practice" education and training providers be represented on the ITAC. Explain why the education and training providers listed are considered "best practice," or if no education and training providers are included, explain why not.

Appendix D – Assumptions Related to the Standards

Submission Requirement: Any underlying assumptions determined by the Industry Technical Advisory Committee (ITAC) to pertain across the skill standards statements for the specific occupational area.

If this application is in relation to an amendment to skill standards either recognized or conditionally recognized by the TSSB, explain the reason for amendment and note the specific key activities (by database KA number) that have amended conditions. Additionally, describe how the ITAC determined that the amendment is applicable on a statewide basis.

Instructions:

List, with an explanation, any underlying assumptions determined by the ITAC to pertain across the skill standards statements.

Appendix E – Application Cover Page

TEXAS SKILL STANDARDS BOARD
Application for Skill Standards Recognition

Texas Skill Standards Board Use Only	
Date Received:	_____
Logged in By:	_____
Delivered Via:	_____

Applicant: Name of Industry Technical Advisory Committee (ITAC) or other submitting group

Mailing Address

City, State, Zip

Project Director or Contact Person Phone # Fax # E-mail

Occupation for which skill standards are being submitted

Recognition Category sought (check one): ____ Recognized ____ Conditionally Recognized

Skill Standards Submission Type (check one): ____ New ____ Amendment ____ Update

Group Seeking Recognition (check category that applies):
_____ Texas Industry Group _____ NSSB Vol. Partnership _____ National Industry Group
_____ U.S. State Authority _____ Foreign Country
_____ Other (Specify): _____

The authorized signature below by the Chair indicates that the skill standards endorsed by the Industry Technical Advisory Committee (ITAC) meet all the necessary recognition requirements contained in the *TSSB Guidelines for Development, Recognition and Usage of Skill Standards*; that the ITAC agrees that the attached skill standards are public domain and shall be available for deposit in the TSSB repository for public access and storage; that an ITAC representative agrees to meet with a TSSB representative prior to formal TSSB consideration of the submitted skill standards; and that the signer has the authority to commit the ITAC to the statements of commitment and agreement contained herein.

Chair, ITAC (Typed Name and Title)

Signature of ITAC Chair Date

TEXAS SKILL STANDARDS BOARD USE ONLY

Staff Evaluation	**TSSB Action**
Recommendation: _____ Recognition _____ Recognized _____ No Recognition _____ Conditionally Recognized	Considered on TSSB Meeting Date: Outcome:
Signature of Reviewer/Date	Signature of TSSB Chair

Appendix F – Description of Skill Standards Development Process

Submission Requirement - A description of the procedural steps undertaken to develop the skill standards, including the job analysis method that generated the raw data, and the validation strategy that ensures the resulting skill standards are valid and reliable.

Instructions:

Job Analysis Method - Describe the job analysis method used to generate the work- and worker-oriented information and statements of assessment from which the skill standards essential elements will be derived. (See Steps 4, 5, 6 and 8 of the *Guidelines*.) Mention any existing skill standards/occupational data and/or best practice/high performance workplace examples used as a base of knowledge to commence the process. (See Step 3 of the *Guidelines*.) Describe the use of subject matter experts, including an explanation of how they are broadly representative of the occupational area by company size, geographic area, and demographic diversity. Attach additional documentation.

Appendix G – Review and Update Agreement

Submission Requirement - A statement of commitment from the ITAC to review and update the skill standards, as needed.

Instructions:

Statement of Commitment - On behalf of the Industry Technical Advisory Committee (ITAC) or industry group submitting the skill standards, the signature below indicates agreement of the ITAC or industry group to review, and update as necessary, the skill standards submitted in this application when there are substantive changes to the work-oriented information, and to submit any updates to the TSSB. In the event that a quorum of the original ITAC membership is unable to re-convene for this purpose, another industry partnership may convene for the purposes of skill standards amendment.

Name of Chair, ITAC/industry group

Signature of Chair, ITAC/industry group

Date

Appendix H – AEKS Requirements

Participant Responsibilities and Qualifications for AEKS Data Collection

Participant	**Responsibilities**	**Qualifications: M - Mandatory D - Desirable (Preferred)**
Job Analyst	• Directs and facilitates overall AEKS process. • Convenes participants. • Trains AEKS SMEs in use of "Skill Scales Companion Guide" and AEKS process steps. • Conducts all steps of AEKS data collection process. • Debriefs participants at end of process.	Agent for development group. Works under the direction of the Industry Training Advisory Committee. **M -** Trained in the use of the "Skill Scales Companion Guide" and the TSSB process for AEKS data collection by the TSSB or an agent acting at the request of the TSSB. **M -** Highly skilled and experienced in facilitation of group sessions to identify work content. **M -** job analyst experience. **M -** Trained DACUM or job analysis facilitator. **D -** 3 or more years experience in: job analysis and the use of metrics/ sophisticated measurement scales. **D -** Masters, Doctorate, or I.O. qualification.
AEKS SMEs **(3-5 minimum per round; 7-10 where possible**	• Works under the direction of the Job Analyst. • Works with other AEKS SMEs to articulate AEKS scale and sub-scale levels for each CWF.	High performing subject matter expert in the occupational area. **M -** Subject matter expert with 5 or more years of experience in the occupational area **<u>or</u>** 1st Line supervisor with at least 3 years supervising employees in the occupational area. **M -** Considered a "top" performer by supervisor or employer. **D -** Experience in training employees in the occupational area.

Process Stages for the Collection of AEKS Data

Stage	Participant(s)	Process Steps
Planning	Job Analyst	• Identifies AEKS Subject Matter Expert Analysts. • Identifies venue, tentative dates and times. • Finalizes AEKS Data Collection plan: dates, time(s), venue(s), and team assignments. • Notifies participants.
Orientation & Training	Job Analyst: • AEKS SMEs	Convenes AEKS SMEs for orientation and training: • Briefs AEKS SMEs on the skill standards development process, and the collection of academic and employability knowledge and skills data. • Orientation – AEKS, Goals of AEKS round • Introduction to and instruction in the use of the skill scales. • Carries out training in the use of the skill scales and the process of data collection. • Disseminates materials for data collection.
		Convenes AEKS SMEs for data collection. Conducts: • Setting expectations for participant responsibility in process (process v content) • Practice using the skill scales for Critical Work Function (CWF) 1.
Data Collection	Job Analyst • AEKS SMEs	Job Analyst and AEKS SMEs progress through CWFs in sequential order using a 5-step process (see table below) to determine the AEKS relevant to each CWF, and to rate them on a 1 to 5 level of complexity using the skill scales:
Wrap Up	Job Analyst	• Collects all documentation. • Ensures all documentation is complete. • Debriefs participants.

Five Step Process for AEKS Assignment and Rating

Step	At Level of	Action	For
1	Critical Work Function (CWF)	Determine whether Relevant or Not Relevant	Each of the 17 Academic and Employability Knowledge and Skills (AEKS) categories.
2	Critical Work Function (CWF)	Rate the complexity sub-scales from 1 to 5; 1 being low, 5 being high.	Each of the AEKS determined to be Relevant in the preceding step.
3	Critical Work Function (CWF)	Rate the overall complexity from 1 to 5; 1 being low, 5 being high.	Each of the AEKS determined to be Relevant and rated at the sub-scales in the preceding step.
4	Critical Work Function (CWF)	Agreement on the rating in overall complexity	All AEKS, by the overall complexity rating determined in the preceding step.
5	Critical Work Function (CWF) and Relevant AEKS	Completion of all steps within the CWF.	Check to make sure that all AEKS have been determined either R or NR; Relevant AEKS have been rated at both sub- and overall complexity scales from 1 to 5.
Repeat these steps until AEKS data has been assigned and rated for each CWF.			

Appendix I – Cover Letter Requesting Recognition (Example)

Gulf Coast
Process Technology Alliance

"A Partnership for America's future"

January 26, 2005

Mr. Wayne Oswald, Chair
Texas Skills Standards Board
1100 San Jacinto, Suite 100
Austin, Texas 78701

Subject: Process Technician Skills Standards Recognition

Mr. Oswald,

The Gulf Coast Process Technology Alliance (GCPTA) is an industry driven nonprofit organization of community colleges and industry partners in Texas, Louisiana, and Mississippi. We in turn are active members of the Center for the Advancement of Process technology (CAPT). CAPT, along with their various alliance partners, working through a National Science Foundation grant, have developed proposed skills standards for process technicians.

The membership of the GCPTA views the recognition of these skills standards as being a significant step forward in accomplishing our goals in developing process technology career paths and providing graduates who meet our industries' needs. Texas industry faces significant competition in today's marketplace and the recognition of these skill standards will help to provide a decisive edge to our industry in that competition.

We ask that the Texas Skills Standards Board give consideration to recognizing these process technician skill standards at your March 1, 2005 meeting. Please accept our appreciation for your time and efforts in this matter.

Sincerely,

Steve D. Ames, President
Gulf Coast Process Technology Alliance

SDA/at