

**ROLE DELINEATION STUDY
FOR
Safety Trained Supervisor[®] in General
Industry Examinations**

**CHEST Technical Report 2004-1
March 2004**



**Council on Certification of Health, Environmental and Safety Technologists
208 Burwash Avenue
Savoy, IL 61874**

With assistance from

**CASTLE Worldwide, Inc.
Research Triangle Park, North Carolina**

**ROLE DELINEATION STUDY
FOR
Safety Trained Supervisor® in General
Industry Examinations**

**CHEST Technical Report 2004-1
March 2004**



**Council on Certification of Health, Environmental and Safety Technologists
208 Burwash Avenue
Savoy, IL 61874**

With assistance from

**CASTLE Worldwide, Inc.
Research Triangle Park, North Carolina**

© 2004 Council on Certification of Health, Environmental and Safety Technologists

All rights reserved.

This document may be freely copied and distributed as long as credit is given to the Council on Certification of Health, Environmental and Safety Technologists.

TABLE OF CONTENTS

Purpose and Background	1
Methodology Overview	2
Conclusions.....	6

Appendices

A. CASTLE Worldwide Role Delineation Study	A-1
Including:	
• List of the role delineation study participants	
• Phase 2 validation survey	

PURPOSE AND BACKGROUND

The purpose of this report is to summarize the procedures used to conduct the Safety Trained Supervisor[®] in General Industry (STS-General Industry) role delineation study and the results obtained from this study. The Council on Certification of Health, Environmental and Safety Technologists (CCHEST) commissioned this role delineation study to develop the examination blueprint for the STS-General Industry examination. CCHEST will use this examination to evaluate the safety- and health-related knowledge and skills of supervisors working in general industry prior to awarding them the STS-General Industry designation.

Peer-operated certification boards set standards for the practice for which certification is awarded and evaluate candidates against those standards. Most often, certification boards set three types of standards: education or training, experience, and demonstrated knowledge and skills through examinations.

When testing candidates for a certification, the examination must cover that subject material relevant to the practice for which certification is awarded. This is called content validity. Examinations must be fair for certification candidates. Testing standards published by national peer certification accreditation bodies and the American Psychological Association require content validity to be verified periodically to ensure that certification examinations are current with practice. These standards as well as other psychometric literature also cover appropriate methods and techniques for conducting content validity studies.

CCHEST will start the STS-General Industry designation in mid-2004. To ensure the validity of the examination leading to this certification, CCHEST relied on experienced psychometricians and a recognized firm providing psychometric services to lead the first role delineation study relating to safety and health practices for supervisors in general industry. The results from this validity study provide the basis for the STS-General Industry examination blueprint.

CCHEST commissioned this study in 2003, and it was completed in 2004. The CCHEST Board of Directors evaluated the results of this study and approved the final examination blueprint in March 2004. Once approved, item banks were generated to prepare for deploying the new STS-General Industry examination.

The current trend in role delineation studies is to define the roles of the certified population along with the applicable knowledge and skills necessary for carrying out the roles. Like the study performed for the STS-Construction examination, this role delineation study followed procedures that resulted in a function-based examination blueprint. In conducting this study, CCHEST relied on the psychometric staff of CASTLE Worldwide to conduct most of the tasks necessary to complete the study. CCHEST is especially grateful to the safety practitioners who volunteered their time to serve on the panel of experts and to complete validations surveys.

METHODOLOGY OVERVIEW

The role delineation study involved three phases. The first phase involved developing the roles performed by STS-General Industry certificate holders and the knowledge and skills necessary for certificate holders to perform these roles. The second phase involved validating the information from the first phase using a survey process completed by a sample of practitioners in the field of general industry supervision. The last phase of the role delineation study was the actual development of the test specification from the ratings obtained from the survey responses acquired in the second phase. Additional details on the methodology used for this study is found in Appendix A.

Phase 1. Initial Development and Validation

CCHEST selected a panel of 12 experts in safety practice (Appendix A) to participate in a two-day workshop conducted in Houston, Texas in August 2003. The panel represented a variety of practices and geographic regions. A senior psychometrician from CASTLE Worldwide led the workshop. The group defined the major roles (tasks) necessary for competence as an STS-General Industry certificate holder.

The group then developed the knowledge certificants need for adequately performing the tasks. Once the knowledge was defined, the panel evaluated each task and rated each task on its importance and criticality as well as the frequency that the task is conducted by certificate holders. The proposed tasks along with their respective knowledge statements were compiled and used as the basis for the validation surveys sent to the representative sample of practitioners.

Phase 2. Validation Study

To conduct this phase, CASTLE Worldwide and CCHEST developed a survey instrument (Appendix A) to validate the work of the 12 member expert panel convened in Phase 1. The survey first asked several questions relating to the respondents' demographic data to verify that a representative cross-section of the practice was obtained. The survey then asked the respondents to evaluate the task statements proposed by the 12 member expert panel with respect to importance, criticality, and frequency of performance. Finally, the survey asked the respondents to list any tasks that were overlooked.

Since the STS-General Industry program is new, the survey could not be sent to an existing pool of certificants. The survey instrument was sent to 13 practitioners in the area of general industry supervision, and nine useable responses were returned. The data from the surveys were then used to develop the test specification in Phase 3.

Phase 3. Development of Test Specifications

The final phase of the role delineation study is to develop the specification that will be used for the actual certification examination. Based on the work conducted in Phase 1 and Phase 2, the role delineation study yielded the blueprint and examination specification in Table 1.

Table 1. STS-General Industry Blueprint and Examination Specification

<p>Task 1 (9.8%)</p> <p>Conduct job safety analyses by performing pre-task hazard analyses, and by evaluating personal protective equipment, tools, equipment, and job expectations in order to identify potential hazards and reduce the risk of incident or injury.</p>	
<p>Knowledge</p> <ol style="list-style-type: none"> Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) Limitations of personal protective equipment Requirements for the selection of personal protective equipment Principles and applications of hazard control Safety resources (e.g., material safety data sheets, key personnel, experts) Documentation of job safety analyses and procedures derived from the analyses Basic mathematics 	<p>Skills</p> <ol style="list-style-type: none"> Recognizing hazards and mitigating exposure Facilitating job safety analyses (identifying job steps) Communicating the purpose and effectiveness of job safety analyses Selecting, using, and maintaining personal protective equipment Using safety resources Using basic mathematical formulas
<p>Task 2 (12.2%)</p> <p>Monitor work practices by observing employees' behaviors and their use of personal protective equipment, tools, and equipment to reduce the risk of incident or injury and to comply with applicable standards.</p>	
<p>Knowledge</p> <ol style="list-style-type: none"> Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) Limitations of personal protective equipment Requirements for the selection of personal protective equipment Inspection and documentation process 	<p>Skills</p> <ol style="list-style-type: none"> Recognizing hazards and mitigating exposure Coaching safe behaviors Using observation to identify unsafe behaviors Conducting worksite inspections Communicating hazards Keeping records
<p>Task 3 (9.8%)</p> <p>Enforce safety and health rules and regulations within the work group by coaching and correcting observed deficiencies or by taking appropriate disciplinary action in order to reduce the risk of incident or injury.</p>	
<p>Knowledge</p> <ol style="list-style-type: none"> Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) Coaching techniques Conflict resolution techniques Appropriate disciplinary policies and procedures 	<p>Skills</p> <ol style="list-style-type: none"> Recognizing hazards and mitigating exposure Coaching safe behaviors Keeping records
<p>Task 4 (8.7%)</p> <p>Take appropriate action when confronted with problems by exercising stop-work authority, modifying tasks, elevating issues, consulting with qualified professionals (when the matter is outside the scope of the supervisor's capabilities), etc., in order to maintain a safe and healthful work environment.</p>	
<p>Knowledge</p> <ol style="list-style-type: none"> Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) Organizational structure for the organization (e.g., hierarchy, chain of command) Organizational policies and procedures Principles and applications of hazard control Basic principles of risk assessment 	<p>Skills</p> <ol style="list-style-type: none"> Exercising leadership Making decisions Communicating to employees effectively Analyzing Resolving conflicts Recognizing and evaluating high risk problems

Table 1. STS-General Industry Blueprint and Examination Specification (continued)

<p>Task 5 (12.4%)</p> <p>Facilitate a positive, proactive safety culture by anticipating hazards, modeling and coaching safe behavior, promoting incident reporting, supporting employee participation, and communicating performance measures in order to enhance safety and health.</p>	
<p style="text-align: center;">Knowledge</p> <ol style="list-style-type: none"> Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed Characteristics of proactive safety cultures and reactive safety cultures Industry-accepted performance measures (e.g., incidence rates) Conflict resolution techniques Principles and applications of hazard control Facilitation and safety communication strategies 	<p style="text-align: center;">Skills</p> <ol style="list-style-type: none"> Distinguishing types of safety cultures Coaching safe behaviors Using observation to identify unsafe behaviors Using open, clear, and interactive communication Resolving conflicts Using facilitation skills
<p>Task 6 (7.6%)</p> <p>Verify that work group employees are capable of performing work safely by reviewing their training records and job-specific qualifications in order to ensure competent staff.</p>	
<p style="text-align: center;">Knowledge</p> <ol style="list-style-type: none"> Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) Training and qualifications necessary for specific jobs and/or tasks Organizational record keeping systems 	<p style="text-align: center;">Skills</p> <ol style="list-style-type: none"> Assessing training needs based on requirements and hazards Making decisions Keeping records
<p>Task 7 (10.2%)</p> <p>Ensure that new personnel in the work area are oriented to safety and health considerations by communicating potential and existing hazards and monitoring behavior in order to make sure that applicable rules and emergency action plans are understood.</p>	
<p style="text-align: center;">Knowledge</p> <ol style="list-style-type: none"> Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) Emergency action plans and procedures 	<p style="text-align: center;">Skills</p> <ol style="list-style-type: none"> Using observation to identify unsafe behaviors Using open, clear, and interactive communication
<p>Task 8 (4.5%)</p> <p>Apply safety and health standards on worksites.</p>	
<p style="text-align: center;">Knowledge</p> <ol style="list-style-type: none"> Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) Security and confidentiality requirements of record keeping processes Ethical considerations concerning the accuracy of information, conflict of interests, etc. Injury management/workers' compensation (working knowledge) 	<p style="text-align: center;">Skills</p> <ol style="list-style-type: none"> Resolving ethical conflicts related to record keeping Keeping records

Table 1. STS-General Industry Blueprint and Examination Specification (continued)

Task 9 (5.4%)	
Participate in employee evaluations by including safety performance as a key criterion in order to hold employees accountable for safety.	
Knowledge	Skills
<ol style="list-style-type: none"> 1. Strategies for evaluating safety behavior, participation in safety culture, etc. 2. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) 3. Observation techniques 4. Organizational safety performance measures for employees 5. Techniques for safety performance recognition and reward or correction 	<ol style="list-style-type: none"> 1. Using observation to identify unsafe behaviors 2. Coaching safe behaviors 3. Communicating to employees effectively 4. Listening to concerns and suggestions 5. Implementing organizational and regulatory requirements 6. Implementing organizational performance measurement procedures 7. Comparing safety performance to applicable standards
Task 10 (7.2%)	
Investigate accidents and/or incidents	
Knowledge	Skills
<ol style="list-style-type: none"> 1. Purpose and principles of accident/incident investigations 2. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) 3. Investigation techniques 4. Organizational record keeping systems 5. Principles and applications of hazard control 6. Lessons learned from incidents at the worksites 7. Organizational policies regarding communication with external entities 8. Ethical considerations concerning sources of data, accuracy of data, preservation of evidence, application of investigation techniques, reporting, etc. 	<ol style="list-style-type: none"> 1. Selecting correct investigation techniques 2. Accessing lessons learned at the worksite and in the industry 3. Applying investigation techniques correctly 4. Analyzing and protecting evidence 5. Communicating results 6. Resolving ethical conflicts
Task 11 (6.4%)	
Implement emergency action plans in accordance with the nature of incidents in order to minimize potential losses.	
Knowledge	Skills
<ol style="list-style-type: none"> 1. Emergency action plans 2. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) 3. Emergency procedures 4. Terminology used in emergency action plans 5. Techniques for implementing exercises 6. Organizational record keeping requirements 	<ol style="list-style-type: none"> 1. Recognizing the nature and severity of incidents 2. Determining actions needed 3. Communicating to employees effectively 4. Executing the emergency action plan 5. Facilitating post exercise/incident evaluations 6. Keeping records
Task 12 (6.0%)	
Interact with other work group supervisors using timely communication to coordinate operations and work processes and to minimize risk.	
Knowledge	Skills
<ol style="list-style-type: none"> 1. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed 2. Leadership techniques 3. Facilitation techniques 4. Effective communication techniques (e.g., among shifts, simultaneous work groups, different levels of the hierarchy within the organization) 5. Principles and applications of hazard control 6. Organizational policies and procedures 7. Organizational record keeping requirements 	<ol style="list-style-type: none"> 1. Recognizing hazards and mitigating exposure 2. Making decisions 3. Using techniques for minimizing risk 4. Using open, clear, and interactive communication

CONCLUSIONS

1. The results of the survey validate the results of the role delineation panel. This conclusion means that the tasks and knowledge developed by the role delineation panel constitute an accurate definition of the work of a person certified as a Safety Trained Supervisor in General Industry.
2. Analysis of the knowledge areas developed for each responsibility support the use of a written, multiple-choice examination format based on practical considerations, such as cost, objectivity in scoring and the types of knowledge included in the study results.

APPENDIX A

CASTLE WORLDWIDE ROLE DELINEATION STUDY



**COUNCIL ON CERTIFICATION OF HEALTH,
ENVIRONMENTAL
AND SAFETY TECHNOLOGISTS (CCHHEST)**

**ROLE DELINEATION STUDY
SAFETY TRAINED SUPERVISOR – GENERAL
INDUSTRY
(STS-GENERAL INDUSTRY)**

JANUARY 2004

PREPARED BY:
CASTLE WORLDWIDE, INC.
900 PERIMETER PARK DRIVE, SUITE G
MORRISVILLE, NC 27560

TABLE OF CONTENTS

Introduction.....	2
Phase I: Initial Development and Evaluation	3
Phase II: Validation Study	4
Evaluation of Tasks.....	8
Survey Respondents Evaluations	9
Panel Members' Evaluation vs. Respondents' Evaluations.....	10
Reliability Analysis	13
Summary of Results.....	13
Conclusion.....	13
Phase III: Test Specifications	14
Tasks and Knowledge Statements.....	15
Appendix A: Role Delineation Meeting Participants.....	22
Appendix B: Role Delineation Survey.....	23

INTRODUCTION

On August 20-23, 2003, a panel of 12 experts assembled by the Council on Certification of Health, Environmental and Safety Technologists (CCHHEST) held a meeting with representatives from CASTLE Worldwide, Inc., (CASTLE) to delineate the field of Certified Safety Trained Supervisor in General Industry (STS-General Industry).

The major function of the CCHHEST credentialing program is to ensure competency and professionalism in the field of safety-trained supervision. It provides assurance that the STS-General Industry certificate holder has met specific criteria designed to ensure that he or she is competent in the provision of services.

The development of a quality credentialing or licensing program must follow certain logically sound and legally defensible procedures for developing examinations. These principles and procedures are outlined in federal regulation including *The Uniform Guidelines on Employee Selection Procedures*) and manuals, such as *Standards for Educational and Psychological Testing*, published by the American Educational Research Association in 1999. CASTLE adheres to these standards in developing examinations for credentialing programs, including the CCHHEST STS-General Industry certification program.

Before a content-valid examination is developed, the knowledge needed to be a competent practitioner in the field must be determined. The process for identifying these competency areas is a role delineation, or job analysis, which serves as a blueprint for examination development. The job analysis also helps to determine the type of examination, such as written or practical, to be developed in order to assess competence.

The critical reason for conducting a role delineation study is to ensure that an examination is content-valid. Content validity is the most commonly applied and accepted validation strategy utilized in establishing certification programs today. In psychometric terms, validation is the way a test developer documents that the competence to be inferred from a test score is actually measured by the examination. A content-valid examination, then, appropriately evaluates knowledge required to function as a competent practitioner in the field. A content-valid examination contains a representative sample of items that measure the knowledge contained in the practice being tested.

Thus, the role delineation study is an integral part of ensuring that an examination is content-valid in that the aspects of the practice covered on the examination reflect the tasks performed in practice settings. For both broad content areas and tasks, the study identified their importance, criticality, and frequency. These ratings play an important role in determining the content of the examination.

The role delineation study for the CCHHEST consisted of the following three phases, which are the focus of this report:

- I. Initial Development and Validation. The 12-member role delineation panel identified the tasks and knowledge essential to the performance of an STS-General Industry.
- II. Validation Study. A representative sample of practitioners in the field of safety-trained supervision reviewed and validated the work of the role delineation panel.
- III. Development of Test Specifications. Based on the ratings gathered from the representative sample of practitioners, the test specifications for the certification examination were developed.

PHASE I INITIAL DEVELOPMENT AND EVALUATION

The first step in analyzing the practice of the STS-General Industry was the identification of the major content areas or tasks. This was followed by the identification of the knowledge and skill associated with each task.

In 2003, CCHES^T assembled a 12-member panel of subject matter experts in the health and safety field to discuss the role of the STS-General Industry. (*See Appendix A: Role Delineation Meeting Participants.*) The panel members represented a variety of practice settings and geographic regions. The following steps were undertaken to complete Phase I:

- A. The panel determined that the practice could be divided into 12 major tasks. These tasks are:
1. Conduct job safety analyses by performing pre-task hazard analysis and by evaluating PPE, tools, equipment, and job expectations in order to identify potential hazards and reduce the risk of incident or injury.
 2. Monitor work practices by observing employees' behavior and their use of PPE, tools, and equipment to reduce the risk of incident or injury and to comply with applicable standards.
 3. Enforce safety and health rules and regulations within the work group by coaching and correcting observed deficiencies or by taking appropriate disciplinary action in order to reduce the risk of incident or injury.
 4. Take appropriate action when confronted with problems by exercising stop-work authority, modifying tasks, elevating issues, consulting with qualified professionals (when the matter is outside the scope of the supervisor's capabilities), etc., in order to maintain a safe and healthful work environment.
 5. Facilitate a positive, pro-active safety culture by anticipating hazards, modeling and coaching safe behavior, promoting incident reporting, supporting employee participation, and communicating performance measures in order to enhance safety and health.
 6. Verify that work group employees are capable of performing work safely by reviewing their training records and job-specific qualifications in order to ensure competent staff.
 7. Ensure that new personnel in the work area are oriented to safety and health considerations by communicating potential and existing hazards and monitoring behavior in order to make sure that applicable rules and emergency action plans are understood.
 8. Perform safety and health-related record keeping as required by company policy and regulations using established procedures to document essential processes.
 9. Participate in employee evaluation by including safety performance as a key criterion in order to hold employees accountable for safety.
 10. Participate in investigations that determine causes, identify corrective actions, and document lessons learned using recognized investigation techniques in order to reduce the risk of workplace incidents and address employee concerns.
 11. Implement emergency action plans in accordance with the nature of incidents in order to minimize potential losses.
 12. Interact with other work group supervisors using timely communication to coordinate operations and work processes and to minimize risk.
- B. Next, the panel subsequently generated a list of knowledge and skills required to perform each task.
- C. The panel members then evaluated each performance task, rating each on importance and criticality to the STS-General Industry and the frequency with which the activities associated with each task are performed.

Based on the work of the role delineation panel, an eight-page survey was developed and sent to practitioners in the field of health and safety. (*See Appendix B: Role Delineation Survey.*) The results of the survey are the focus of Phase II.

PHASE II VALIDATION STUDY

Questionnaire Design and Distribution

Using the tasks identified by the role delineation panel, CASTLE developed an eight-page survey to be completed by a nationwide sample of practitioners in the field of safety-trained supervision. CASTLE distributed the questionnaire to 13 practitioners to evaluate, validate, and provide feedback on the role delineation panel's task list. The survey also solicited biographical information from the respondents in order to ensure a representative response and completion by appropriately qualified individuals. Of the 13 questionnaires distributed, nine (69.23%) usable responses were returned to CASTLE.

Who Responded to the Survey?

As shown in the chart below, the majority of respondents (8, or 88.9%) are male, with one (11.1%) female. Most of the respondents (8 or 88.9%) were above the age of 50. Most (6 or 66.67%) have worked in their current role for their current employer for more than five years and all worked in facilities with more than 100 employees. Because not all survey respondents answered every survey question, the total number of responses for each survey item may not equal the total number of surveys returned.

As reflected in the demographic data and graphs on the following pages, the survey respondents represent a diverse population from across the country.

Figure 1. Breakdown of Respondents' Gender

The vast majority of the respondents were male with only one individual, or 11.1% of the sample, reporting her gender as female.

GENDER		
	Frequency	Percent
Female	1	11.1
Male	8	88.9
Total	9	100.0

Figure 2. Breakdown of Respondents' Age

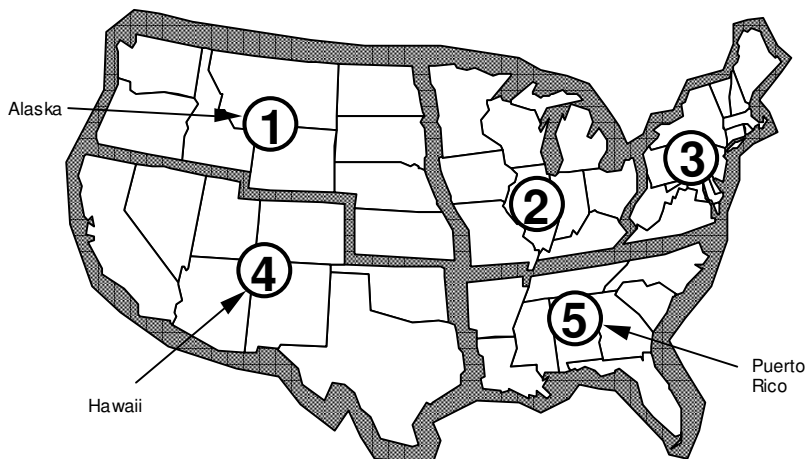
More than half of the respondents were between 50 and 60 years old (55.6%). No individuals reported their ages as less than 40 years old.

AGE		
	Frequency	Percent
Under 20 years	0	0.0
20-29 years	0	0.0
30-39 years	0	0.0
Total	0	0.0

AGE		
	Frequency	Percent
40-49 years	1	11.1
50-60 years	5	55.6
More than 60 years	3	33.3
Total	9	100.0

Figure 3. Breakdown of Respondents' Location

States were combined into regions as shown below. Region 1 was the only region not represented by the respondent sample.



LOCATION		
	Frequency	Percent
1	0	0.0
2	1	12.5
3	1	12.5
Total	2	25.0

LOCATION		
	Frequency	Percent
4	3	37.5
5	3	37.5
6 (Non-US)	0	0.0
Total	6	75.0

Figure 4. What is the name of your current employer?

Respondents were asked to write in their current employers. Results are provided below.

CURRENT EMPLOYER	
	Frequency
Bell Helicopter, Textron	1
Duke Energy	1
Duke Power	1
Environmental Resources Management (ERM)	1
Hewlett-Packard Company	1

CURRENT EMPLOYER	
	Frequency
NASA	1
NASA Glenn Research Center	1
Northeast GA Health System	1
Bell SD School of Mines and Technology	1

Figure 5. In what industry would your current employer be categorized?

The largest percentage of respondents reported working with employers that would be categorized as “Other.” These respondents reported their current employer would be categorized as: “consulting,” “information technology,” “nuclear,” “nuclear power,” and “university.”

CURRENT EMPLOYER		
	Frequency	Percent
Construction	0	0.0
Governmental	2	22.2
Health Care	1	11.1
Insurance	0	0.0
Manufacturing	1	11.1
Total	5	44.4

CURRENT EMPLOYER		
	Frequency	Percent
Petrochemical	0	0.0
Retail	0	0.0
Transportation	0	0.0
Retired	0	0.0
Other	5	55.6
Total	5	55.6

Figure 6. What is your current role/title with your/at current employer?

Respondents were asked to write in their current role/title at their current employers. Results are provided below.

CURRENT ROLE/TITLE	
	Frequency
Associate professor	1
Chief, EMO	1
EHS consultant	2
Environmental team leader	1

CURRENT ROLE/TITLE	
	Frequency
Industrial hygienist	1
Manager, Global health and safety. My team sets HPs H&S strategy.	1
Safety manager	1
Senior health and safety consultant	1

Figure 7. How many years have you worked in your current role with your current employer?

The respondents were varied in their level of experience in their current role with their current employer.

EXPERIENCE		
	Frequency	Percent
Less than 3 years	1	11.1
3-5 years	2	22.2
6-10 years	4	44.4
Total	7	77.7*

EXPERIENCE		
	Frequency	Percent
11-15 years	0	0.0
16-20 years	1	11.1
More than 20 years	1	11.1
Total	2	22.2*

**Due to rounding error, percentage totals may not always equal 100.*

Figure 8. How many employees work at your facility?

All respondents reported that more than 100 employees worked at their facility.

EMPLOYEES		
	Frequency	Percent
1-10 employees	0	0.0
11-25 employees	0	0.0
26-50 employees	0	0.0
Total	0	0.00

EMPLOYEES		
	Frequency	Percent
51-75 employees	0	0.0
76-100 employees	0	0.0
More than 100 employees	8	100.00
Total	8	100.00

Figure 9. How many employees do you supervise?

Almost half (44.4%) of respondents reported that they did not supervise any employees. Only one respondent reported supervising greater than 50 employees.

EMPLOYEES SUPERVISED		
	Frequency	Percent
None	4	44.4
1-10 employees	3	33.3
11-25 employees	1	11.1
Total	8	88.8*

EMPLOYEES SUPERVISED		
	Frequency	Percent
26-50 employees	0	0.0
51-75 employees	1	11.1
More than 75 employees	0	0.0
Total	1	11.1*

**Due to rounding error, percentage totals may not always equal 100.*

Figure 10. In what industries would your previous employers be categorized?

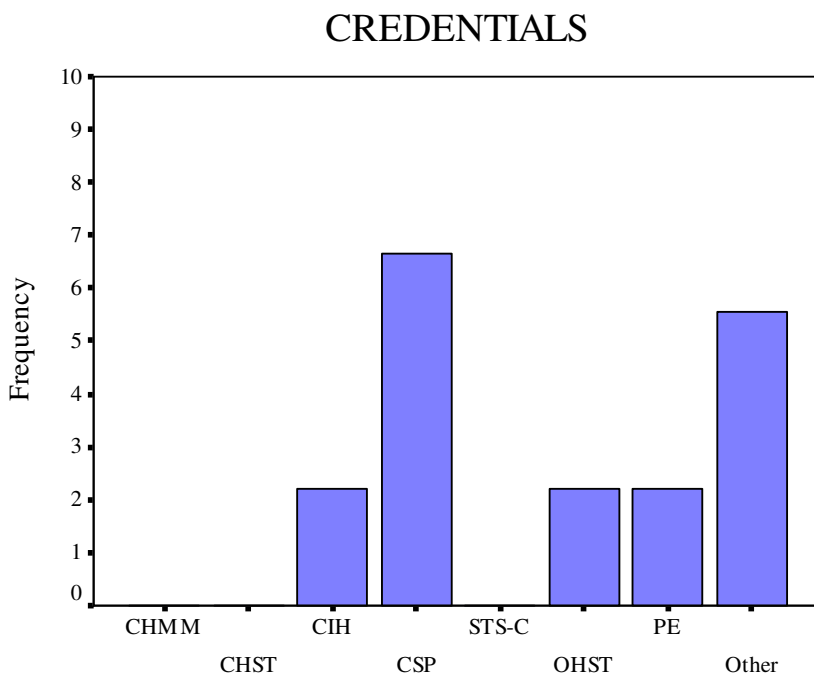
Categorizations for previous employers are provided below. Because respondents were allowed to select more than one response, the total for this question does not equal the number of respondents. The five “Other” employers were reported as: “aviation,” “consulting-ICU,” “consulting,” “university, pharmaceutical,” and “wholesale.”

PREVIOUS EMPLOYER	
	Frequency
Construction	1
Governmental	3
Health Care	1
Insurance	0
Manufacturing	3

PREVIOUS EMPLOYER	
	Frequency
Petrochemical	2
Retail	1
Transportation	0
Retired	0
Other	5

Figure 11. Which of the following credentials do you hold?

In this question, respondents were allowed to choose all credentials on the list that they held as well as write in any other credentials they held which were not included on the list. Of the five individuals who checked the “Other” box, one individual listed ASP, CHSP, and ASO. Two individuals specified the Certified Utility Safety Administrator credential. One individual reported holding the CPE credential, and one individual specified the CSHM credential.



Evaluation of Tasks

The tasks to be evaluated include:

1. Conduct job safety analyses by performing pre-task hazard analysis and by evaluating PPE, tools, equipment, and job expectations in order to identify potential hazards and reduce the risk of incident or injury.
2. Monitor work practices by observing employees' behavior and their use of PPE, tools, and equipment to reduce the risk of incident or injury and to comply with applicable standards.
3. Enforce safety and health rules and regulations within the work group by coaching and correcting observed deficiencies or by taking appropriate disciplinary action in order to reduce the risk of incident or injury.
4. Take appropriate action when confronted with problems by exercising stop-work authority, modifying tasks, elevating issues, consulting with qualified professionals (when the matter is outside the scope of the supervisor's capabilities), etc., in order to maintain a safe and healthful work environment.
5. Facilitate a positive, pro-active safety culture by anticipating hazards, modeling and coaching safe behavior, promoting incident reporting, supporting employee participation, and communicating performance measures in order to enhance safety and health.
6. Verify that work group employees are capable of performing work safely by reviewing their training records and job-specific qualifications in order to ensure competent staff.
7. Ensure that new personnel in the work area are oriented to safety and health considerations by communicating potential and existing hazards and monitoring behavior in order to make sure that applicable rules and emergency action plans are understood.
8. Perform safety and health-related record keeping as required by company policy and regulations using established procedures to document essential processes.
9. Participate in employee evaluation by including safety performance as a key criterion in order to hold employees accountable for safety.

10. Participate in investigations that determine causes, identify corrective actions, and document lessons learned using recognized investigation techniques in order to reduce the risk of workplace incidents and address employee concerns.
11. Implement emergency action plans in accordance with the nature of incidents in order to minimize potential losses.
12. Interact with other work group supervisors using timely communication to coordinate operations and work processes and to minimize risk.

A. Survey Respondents’ Evaluations

The survey respondents were asked to evaluate each performance task, rating each on importance, criticality, and frequency. A five-point scale was used for each of the ratings, with a “5” representing the highest rating. The scale anchors for importance, criticality, and frequency are listed below as a reference.

Importance Ratings

- 1 = Not Important.** Performance of this task is not essential to the job of the minimally competent STS- General Industry.
- 2 = Somewhat Important.** Performance of this task is minimally essential to the job of the minimally competent STS- General Industry.
- 3 = Important.** Performance of this task is moderately essential to the job of the minimally competent STS- General Industry.
- 4 = Very Important.** Performance of this task is clearly essential to the job of the minimally competent STS- General Industry.
- 5 = Extremely Important.** Performance of this task is absolutely essential to the job of the minimally competent STS- General Industry.

As depicted in the following charts, survey respondents indicated that Task 7 was the most important of the twelve tasks. Task 8 was considered the least important task.

	IMPORTANCE			
	Sample Size (N)	Mean	Standard Error of Mean	Standard Deviation
Task 1	9	4.00	0.4714	1.414
Task 2	9	4.00	0.2887	0.866
Task 3	9	4.22	0.2778	0.833
Task 4	9	3.89	0.3889	1.167
Task 5	9	4.22	0.2222	0.667
Task 6	9	4.22	0.4006	1.202
Task 7	9	4.56	0.1757	0.527
Task 8	9	2.78	0.2222	0.667
Task 9	9	3.44	0.3379	1.014
Task 10	9	3.89	0.2606	0.782
Task 11	9	3.89	0.3889	1.167
Task 12	9	3.22	0.4006	1.202

Criticality Ratings

- 1 = No Harm.** Inability to perform this task would have no adverse consequences.
- 2 = Minimal Harm.** Inability to perform this task would lead to error with minimal adverse consequences.
- 3 = Moderate Harm.** Inability to perform this task would lead to error with moderate adverse consequences.
- 4 = Significant Harm.** Inability to perform this task would lead to error with major adverse consequences.
- 5 = Extreme Harm.** Inability to perform this task would definitely lead to error with severe consequences.

The respondents considered Task 7 to be the most critical of the 12 tasks, followed by Task 11. Task 8 was considered to be the least critical task.

	CRITICALITY			
	Sample Size (N)	Mean	Standard Error of Mean	Standard Deviation
Task 1	9	3.89	0.3889	1.167
Task 2	9	3.44	0.2940	0.882
Task 3	9	3.56	0.3379	1.014
Task 4	9	3.78	0.3643	1.093
Task 5	9	3.56	0.2940	0.882
Task 6	9	3.89	0.3514	1.054
Task 7	9	4.11	0.3514	1.054
Task 8	9	2.11	0.2606	0.782
Task 9	9	2.44	0.2422	0.726
Task 10	9	3.00	0.3333	1.000
Task 11	9	4.00	0.4082	1.225
Task 12	9	2.78	0.3643	1.093

Frequency

Frequency: Frequency is defined as the percent of time that the minimally competent STS-General Industry spends performing the duties or using the principles associated with each task statement. Rate each of the 12 task statements by indicating in the percent of time that a minimally competent STS-General Industry would spend performing duties within the task statement. **PLEASE MAKE THE PERCENTAGES YOU ASSIGN EACH TASK STATEMENT TOTAL 100 PERCENT FOR ALL 12 TASK STATEMENTS.** In the following table, write the percent of time that best exemplifies your frequency rating for each task statement.

Because the responses for one respondent did not add to 100, the responses were not used for this analysis. The respondents felt Task 5 and Task 2 were performed the most often. Task 3 was rated the next most frequently performed task.

Task	FREQUENCY			
	Sample Size (N)	Mean	Standard Error of Mean	Standard Deviation
Task 1	8	10.38	2.7317	7.726
Task 2	8	15.38	2.0172	5.706
Task 3	8	10.50	2.4349	6.887
Task 4	8	8.63	1.8892	5.344
Task 5	8	15.38	2.0172	5.706
Task 6	8	6.00	1.5924	4.504
Task 7	8	10.38	1.4993	4.241
Task 8	8	3.50	0.5000	1.414
Task 9	8	4.13	0.7892	2.232
Task 10	8	6.50	1.2101	3.423
Task 11	8	4.00	0.5669	1.604
Task 12	8	5.25	1.0308	2.915

B. Panel Members' Evaluation vs. Respondents' Evaluations

The evaluations of tasks by the panel members were compared to the evaluations by the survey respondents to ensure that the results were similar. The two groups differed in their importance ratings of some tasks; however, most of the tasks were rated similarly.

	IMPORTANCE		
	Survey	Panel	Difference
Task 1	4.00	3.79	0.21
Task 2	4.00	3.71	0.29
Task 3	4.22	3.43	0.79
Task 4	3.89	3.79	0.10
Task 5	4.22	3.07	1.15
Task 6	4.22	2.43	1.79
Task 7	4.56	3.50	1.06
Task 8	2.78	2.29	0.49
Task 9	3.44	2.50	0.94
Task 10	3.89	3.00	0.89
Task 11	3.89	3.21	0.68
Task 12	3.22	3.14	0.08

The criticality and frequency ratings for both the survey respondents and the panelists are provided below. As depicted in the table below, the criticality of tasks was rated similarly.

	CRITICALITY		
	Survey	Panel	Difference
Task 1	3.89	3.79	0.10
Task 2	3.44	3.50	-0.06
Task 3	3.56	3.43	0.13
Task 4	3.78	3.79	-0.01
Task 5	3.56	2.57	0.99
Task 6	3.89	2.86	1.03
Task 7	4.11	3.43	0.68
Task 8	2.11	1.86	0.25
Task 9	2.44	2.07	0.37
Task 10	3.00	2.64	0.36
Task 11	4.00	3.43	0.57
Task 12	2.78	3.43	-0.65

	FREQUENCY		
	Survey	Panel	Difference
Task 1	10.38	15.61	-5.23
Task 2	15.38	21.61	-6.23
Task 3	10.50	10.29	0.21
Task 4	8.63	8.50	0.13
Task 5	15.38	10.57	4.81
Task 6	6.00	4.18	1.82
Task 7	10.38	6.93	3.45
Task 8	3.50	4.25	-0.75
Task 9	4.13	3.54	0.59
Task 10	6.50	4.32	2.18
Task 11	4.00	3.43	0.57
Task 12	5.25	7.79	-2.54

Reliability Analysis of Task Scales

The reliability of the scales was assessed in order to determine how well the tasks consistently measured the area of interest. Reliability refers to the degree to which tests or surveys are free from measurement error. Imagine a scale measuring an individual’s weight that registered a substantially different weight with each use for the same person. With this inconsistency (i.e., unreliability), it would be impossible to determine an accurate weight. This analogy can be extended to the Importance, Criticality, and Frequency ratings of each task. It is important to understand the consistency of the data along these dimensions in order to draw defensible conclusions. Reliability was measured by internal consistency (Cronbach’s Alpha) using the respondent’s ratings of Importance, Criticality, and Frequency for each task. Reliability coefficients range from 0 to 1 and should be above 0.7 to be judged as adequate. Reliability values below 0.7 indicate an unacceptable amount of measurement error.

In the STS-General Industry survey, the critical value of 0.7 was easily exceeded for the importance and criticality scales. Reliability was unable to be computed for frequency scale due to the lack of variance.

RELIABILITY		
Importance	Criticality	Frequency
0.7772	0.8887	***

Summary of Results

As shown in the charts on the preceding pages, the survey respondents indicated that all tasks are important. Each of the 12 tasks has an average importance above the midpoint (2.5) of the five-point rating scale, with 2 indicating “Somewhat Important” and 3 indicating “Important.”

Similarly, the respondents considered all the tasks to be critical. Each of the 12 tasks has an average criticality rating of at least 2.11 on the five-point scale, which means that incompetent performance of tasks could result in at least “Minimal Harm” to “Moderate Harm” to the client, the STS-General Industry, the public, etc.

The survey respondents indicated they spend a various amounts of time performing duties in most of the tasks. The percentage of time reported spent in each of the tasks ranged from 3.50 to 15.38%.

Several of the tasks were ranked similarly in regards to importance, criticality, and frequency. For example, Task 7 was reported to be the most critical and important, and one of the third most frequently performed tasks and Task 8 was ranked last across all dimensions. However, many of the other tasks were not ranked similarly. For example, while respondents considered Task 6 to be the second most important and the third most critical, it ranked much lower in terms of frequency. This finding suggests that the frequency with which an STS-General Industry performs a task does not necessarily correlate with that task’s importance or criticality. In other words, a task that is not performed very frequently may still be considered very important and/or critical and vice versa. These outcomes affect the weight that is assigned to that task in the examination blueprint.

Conclusion

The results of the survey validate the results of the role delineation panel. This conclusion means that the tasks and knowledge developed by the role delineation panel constitute an accurate definition of the work of an STS-General Industry. Based on a psychometric analysis of the tasks identified by the role delineation study, competence in safety trained supervision can be assessed using a multiple-choice examination format.

**PHASE III
TEST SPECIFICATIONS**

The final phase of a role delineation study is the development of test specifications that identify the proportion of questions from each task that will appear on the certification examination. Test specifications are developed by combining the overall evaluations of importance, criticality, and frequency and converting the results into percentages. These percentages are used to determine the number of questions related to each task that should appear on the multiple-choice format examination.

	TEST BLUEPRINT	
	% of Test	# of Items on Test
Task 1	9.77%	10
Task 2	12.21%	12
Task 3	9.78%	10
Task 4	8.72%	9
Task 5	12.39%	12
Task 6	7.55%	8
Task 7	10.19%	10
Task 8	4.49%	5
Task 9	5.36%	5
Task 10	7.16%	7
Task 11	6.36%	6
Task 12	6.02%	6
Total	100%	100

TASKS AND KNOWLEDGE STATEMENTS

This section of the report contains the tasks and knowledge statements as delineated by the role delineation panel.

Task 1: Conduct job safety analyses by performing pre-task hazard analysis and by evaluating PPE, tools, equipment, and job expectations in order to identify potential hazards and reduce the risk of incident or injury.

Evaluation and Allocation of Questions for Multiple-Choice Examination

Task	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
1	4.00	3.89	10.38	9.77%	10

Knowledge of:

- a. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed
- b. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)
- c. Limitations of personal protective equipment
- d. Requirements for the selection of personal protective equipment
- e. Principles and applications of hazard control
- f. Safety resources (e.g., MSDS, key personnel, experts)
- g. Documentation of job safety analysis and procedures derived from the analysis
- h. Basic mathematics

Skill in:

- a. Recognizing hazards and mitigating exposure
- b. Facilitating job safety analysis (identifying job steps)
- c. Communicating the purpose and effectiveness of job safety analysis
- d. Selecting, using, and maintaining personal protective equipment
- e. Using safety resources
- f. Using basic mathematical formulas

Task 2: Monitor work practices by observing employees' behavior and their use of PPE, tools, and equipment to reduce the risk of incident or injury and to comply with applicable standards.

Evaluation and Allocation of Questions for Multiple-Choice Examination

Task	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
2	4.00	3.44	15.38	12.21%	12

Knowledge of:

- a. Inspection and documentation process
- b. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)
- c. Limitations of personal protective equipment
- d. Requirements for the selection of personal protective equipment

- e. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed

Skill in:

- a. Conducting work site inspections
- b. Using observation to identify unsafe behaviors
- c. Coaching safe behavior
- d. Recognizing hazards and mitigating exposure
- e. Communicating hazards
- f. Keeping records

Task 3: Enforce safety and health rules and regulations within the work group by coaching and correcting observed deficiencies or by taking appropriate disciplinary action in order to reduce the risk of incident or injury.

Evaluation and Allocation of Questions for Multiple-Choice Examination

	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
3	4.22	3.56	10.50	9.78%	10

Knowledge of:

- a. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)
- b. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed
- c. Coaching techniques
- d. Conflict resolution techniques
- e. Appropriate disciplinary policies and procedures

Skill in:

- a. Recognizing hazards and mitigating exposure
- b. Coaching safe behavior
- c. Keeping records

Task 4: Take appropriate action when confronted with problems by exercising stop-work authority, modifying tasks, elevating issues, consulting with qualified professionals (when the matter is outside the scope of the supervisor’s capabilities), etc., in order to maintain a safe and healthful work environment.

Evaluation and Allocation of Questions for Multiple-Choice Examination

	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
4	3.89	3.78	8.63	8.72%	9

Knowledge of:

- a. Organizational structure for the company (e.g., hierarchy, chain of command)
- b. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)

- c. Company policies and procedures
- d. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed
- e. Principles and applications of hazard control
- f. Basic principles of risk assessment

Skill in:

- a. Exercising leadership
- b. Making decisions
- c. Communicating effectively
- d. Analyzing
- e. Resolving conflicts
- f. Recognizing and evaluating high risk problems

Task 5: Facilitate a positive, pro-active safety culture by anticipating hazards, modeling and coaching safe behavior, promoting incident reporting, supporting employee participation, and communicating performance measures in order to enhance safety and health.

Evaluation and Allocation of Questions for Multiple-Choice Examination

Task	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
5	4.22	3.56	15.38	12.39%	12

Knowledge of:

- a. Characteristics of proactive safety cultures and reactive safety cultures
- b. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed
- c. Principles and applications of hazard control
- d. Industry-accepted performance measures (e.g., incidence rates)
- e. Conflict resolution techniques
- f. Facilitation and safety communication strategies

Skill in:

- a. Coaching safe behaviors
- b. Using open, clear, and interactive communication
- c. Using observation to identify unsafe behaviors
- d. Using facilitation skills
- e. Resolving conflicts
- f. Distinguishing types of safety cultures

Task 6: Verify that work group employees are capable of performing work safely by reviewing their training records and job-specific qualifications in order to ensure competent staff.

Evaluation and Allocation of Questions for Multiple-Choice Examination

	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
6	4.22	3.89	6.00	7.55%	8

Knowledge of:

- a. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed
- b. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)
- c. Training and qualifications necessary for specific jobs and/or tasks
- d. Company record keeping system

Skill in:

- a. Assessing training needs based on requirements and hazards
- b. Keeping records
- c. Making decisions

Task 7: Ensure that new personnel in the work area are oriented to safety and health considerations by communicating potential and existing hazards and monitoring behavior in order to make sure that applicable rules and emergency action plans are understood.

Evaluation and Allocation of Questions for Multiple-Choice Examination

	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
7	4.56	4.11	10.38	10.19%	10

Knowledge of:

- a. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed
- b. Emergency action plan and procedures
- c. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)

Skill in:

- a. Using open, clear, and interactive communication
- b. Using observation to identify unsafe behaviors

Task 8: Apply safety and health standards on job sites.

Evaluation and Allocation of Questions for Multiple-Choice Examination

	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
8	2.78	2.11	3.50	4.49%	5

Knowledge of:

- a. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)
- b. Security and confidentiality requirements of record keeping processes
- c. Ethical considerations concerning the accuracy of information, conflict of interest, etc.
- d. Injury management/workers compensation (working knowledge)

Skill in:

- a. Keeping records
- b. Resolving ethical conflicts related to record keeping

Task 9: Participate in employee evaluation by including safety performance as a key criterion in order to hold employees accountable for safety.

Evaluation and Allocation of Questions for Multiple-Choice Examination

	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
9	3.44	2.44	4.13	5.36%	5

Knowledge of:

- a. Strategies for evaluating safety behavior, participation in the safety culture, etc.
- b. Observation techniques
- c. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)
- d. Company-specified safety performance measures for employees
- e. Techniques for safety performance recognition and reward or correction

Skill in:

- a. Communicating to employees effectively
- b. Using observation to identify unsafe behaviors
- c. Listening to concerns and suggestions
- d. Implementing company and regulatory requirements
- e. Implementing company performance measurement procedures
- f. Comparing safety performance to applicable standards
- g. Coaching safe behavior

Task 10: Investigate accidents and/or incidents.

Evaluation and Allocation of Questions for Multiple-Choice Examination

	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
10	3.89	3.00	6.50	7.16%	7

Knowledge of:

- a. Purpose and principles of accident investigation
- b. Investigation techniques (e.g., interviewing, evidence collection)
- c. Principles and applications of hazard control
- d. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)
- e. Lessons learned from incidents at the worksite
- f. Company record keeping requirements
- g. Company policy regarding communication with external entities
- h. Ethical considerations concerning sources of data, accuracy of data, preservation of evidence, application of investigation techniques, reporting, etc.

Skill in:

- a. Selecting correct investigation techniques
- b. Accessing lessons learned at the worksite and in the industry
- c. Applying investigation techniques correctly
- d. Analyzing and protecting evidence
- e. Communicating results
- f. Resolving ethical conflicts

Task 11: Implement emergency action plans in accordance with the nature of incidents in order to minimize potential losses.

Evaluation and Allocation of Questions for Multiple-Choice Examination

	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
11	3.89	4.00	4.00	6.36%	6

Knowledge of:

- a. Emergency action plans
- b. Emergency procedures
- c. Terminology used in emergency action plans.
- d. Techniques for implementing exercises
- e. Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices)
- f. Record keeping requirements

Skill in:

- a. Recognizing the nature and severity of incidents
- b. Determining actions needed
- c. Executing the emergency action plan
- d. Communicating effectively
- e. Keeping records
- f. Facilitating post exercise/incident evaluation

Task 12: Interact with other work group supervisors using timely communication to coordinate operations and work processes and to minimize risk.

Evaluation and Allocation of Questions for Multiple-Choice Examination

Task	RATINGS				
	Importance	Criticality	Frequency	% of Items on Test	# of Items on Test
12	3.22	2.78	5.25	6.02%	6

Knowledge of:

- a. Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed
- b. Principles and applications of hazard control
- c. Leadership techniques
- d. Facilitation techniques

- e. Effective communication techniques (e.g., among shifts, simultaneous work groups, different levels of the hierarchy within the company)
- f. Company policy and procedure
- g. Company record keeping requirements

Skill in:

- a. Using open, clear, and interactive communication
- b. Using techniques for minimizing risk
- c. Making decisions
- d. Recognizing hazards and mitigating exposure

**APPENDIX A:
ROLE DELINEATION SURVEY PARTICIPANTS**

Scott D. Campbell, OHST
Columbia, MO

Jan Simon Clark, CSP, CIH
Cypress, TX

Don Enslow
Anchorage, AK

Quirino Escamilla, OHST
Friendswood, TX

Jayson R. Evans, OHST
West Jordan, UT

Allen O Graff, OHST
Katy, TX

Mike A. McNeill, CSP, P.E.
Dayton, MD

Thomas F. Ryan, CSP, OHST, CHST, STS
Lewiston, ME

Steven Schoolcraft, CSP, P.E.
Savoy, IL

David M. Sine, CSP, OHST
Irvine, CA

Diane C. Tarlton, CSP, OHST
Rock Hill, SC

Brian E. White, OHST
Ringgold, GA

**APPENDIX B:
ROLE DELINEATION SURVEY**

**Instructions for Completing the
Council on Certification of Health, Environmental
and Safety Technologists (CCHESST) Role Delineation Survey for the
Safety Trained Supervisor – General Industry (STS-General Industry)**

This booklet contains the Council on Certification of Health, Environmental and Safety Technologists (CCHESST) Safety Trained Supervisor in General Industry (STS-General Industry) Role Delineation Survey, along with instructional materials to aid you in completing it. Directions are provided at the beginning of each section of the survey.

In **Section A**, you are asked to complete a **Confidential Survey**, which provides us with the demographic information necessary to ensure that individuals working in various settings with differing backgrounds are represented in the data collection.

In **Section B**, we have provided you with a list of definitions and terms that are used throughout the survey. We suggest that you review the **Definition of Terms** before responding to any survey questions.

In **Section C**, you are asked to review the **Task Statements** that define the duties of an STS-General Industry. We ask that you rate the importance, criticality, and frequency of these task statements as they pertain to the minimally competent STS-General Industry.

Please review the entire booklet before responding to any of the questions. Your review will help you to understand our terminology and the structure of the Role Delineation Survey.

Please mark your responses directly in this booklet. We will collect all of the surveys and use your responses to help determine the blueprint for the CCHESST STS-General Industry examination. Please return your completed survey by **4 November 2003** in the enclosed, self-addressed, stamped envelope to:

**CASTLE Worldwide, Inc.
Post Office Box 14148
Research Triangle Park, North Carolina 27709-4148**

Thank you in advance for your help with this very important project.

Section A
Confidential Survey

Please fill in the following demographic information, which will be used to ensure that individuals working in various settings with differing backgrounds are represented in the data collection.

All responses are kept strictly confidential by CASTLE Worldwide, Inc. Computer programs are used to sort the data. No individual person or company, or the particular data of either, will be identifiable in any report generated using information obtained through this survey.

Please check the appropriate boxes, or print your responses.

1. Gender: *(Check only one.)*

Female

Male

2. Age: *(Check only one.)*

Under 20 years

30-39 years

50-60 years

20-29 years

40-49 years

More than 60 years

3. In which state do you live?

4. What is the name of your current employer?

5. In what industry would your current employer be categorized? *(Check only one.)*

Construction

Petrochemical

Governmental

Retail

Health Care

Transportation

Insurance

Retired

Manufacturing

Other *(Please specify.)*

6. What is your current role/title with your/at current employer?

7. How many years have you worked in your current role with your current employer? *(Check only one.)*

- | | | |
|--|--------------------------------------|---|
| <input type="checkbox"/> Less than 3 years | <input type="checkbox"/> 6-10 years | <input type="checkbox"/> 16-20 years |
| <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 11-15 years | <input type="checkbox"/> More than 20 years |

8. How many employees work at your facility? *(Check only one.)*

- | | | |
|--|--|--|
| <input type="checkbox"/> 1-10 employees | <input type="checkbox"/> 26-50 employees | <input type="checkbox"/> 76-100 employees |
| <input type="checkbox"/> 11-25 employees | <input type="checkbox"/> 51-75 employees | <input type="checkbox"/> More than 100 employees |

9. How many employees do you supervise? *(Check only one.)*

- | | | |
|---|--|---|
| <input type="checkbox"/> None | <input type="checkbox"/> 11-25 employees | <input type="checkbox"/> 51-75 employees |
| <input type="checkbox"/> 1-10 employees | <input type="checkbox"/> 26-50 employees | <input type="checkbox"/> More than 75 employees |

10. What are the names of your previous employers?

11. In what industries would your previous employers be categorized? *(Select all that apply.)*

- | | |
|--|---|
| <input type="checkbox"/> Construction | <input type="checkbox"/> Petrochemical |
| <input type="checkbox"/> Governmental | <input type="checkbox"/> Retail |
| <input type="checkbox"/> Health Care | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Insurance | <input type="checkbox"/> Retired |
| <input type="checkbox"/> Manufacturing | <input type="checkbox"/> Other <i>(Please specify.)</i> |

12. Which of the following credentials do you hold? *(Select all that apply.)*

- | | | |
|-------------------------------|---|---|
| <input type="checkbox"/> CHMM | <input type="checkbox"/> CSP | <input type="checkbox"/> PE |
| <input type="checkbox"/> CHST | <input type="checkbox"/> STS-Construction | <input type="checkbox"/> Other <i>(Please specify.)</i> |
| <input type="checkbox"/> CIH | <input type="checkbox"/> OHST | <hr/> |

Section B Definition of Terms

Below you will find definitions of the some of the terms found in this Role Delineation Survey. Please review this information before completing the survey.

Safety Trained Supervisor in General Industry (STS-General Industry): The Safety Trained Supervisor in General Industry (STS-General Industry) is a crew chief, foreman, or other type of supervisor who, among other duties, is responsible for the identification, prevention, and control of hazards that may develop in or result from work processes and/or work environment. The STS has 30 contact hours of training in safety and three years of experience in the occupation (not necessarily as a supervisor).

Task Statement: The task statements are the major responsibilities or duties that define the role of the STS-General Industry. Each task statement may be considered a major heading in an outline. Typically, task statements answer such questions as: What activity did you perform? To whom or to what was your activity directed? Why did you perform that activity? How did you accomplish the activity?

Section C Evaluation of Task Statements

Instructions: You will be rating each task statement identified by an expert panel on three dimensions: *Importance, Criticality, and Frequency.*

Importance: Importance is defined as the degree to which the knowledge covered in the task statement is essential to the job performance of a minimally competent STS-General Industry. Indicate how important each task statement is to the performance of a minimally competent STS-General Industry. Rate each of the 12 task statements by using the scale below. Please assign each task statement **only one** rating. **DO NOT RANK THE TASK STATEMENTS.** In the following table, circle the number of the description below that best exemplifies your importance rating for each task statement.

- 1 = **Not Important.** Performance of the task is not essential to the job performance of the minimally competent STS-General Industry.
- 2 = **Somewhat Important.** Performance of the task is minimally essential to the job of the minimally competent STS-General Industry.
- 3 = **Important.** Performance of the task is moderately essential to the job of the minimally competent STS- General Industry.
- 4 = **Very Important.** Performance of the task is clearly essential to the job of the minimally competent STS- General Industry.
- 5 = **Extremely Important.** Performance of the task is absolutely essential to the job of the minimally competent STS-General Industry.

Criticality: Criticality is defined as the degree to which adverse effects could result if the minimally competent STS-General Industry is not knowledgeable in the task statement. Indicate the degree to which the inability to perform the task would be seen as causing harm to a client, a co-worker, the public, the environment, etc. Harm may be physical, emotional, financial, etc. Rate each of the 12 task statements by using the scale below. Please assign each task statement **only one** rating. **DO NOT RANK THE TASK STATEMENTS.** In the following table, circle the number of the description below that best exemplifies your criticality rating for each task statement.

- 1 = **No Harm.** Inability to perform this task would have no adverse consequences.
- 2 = **Minimal Harm.** Inability to perform this task would lead to error with minimal adverse consequences.
- 3 = **Moderate Harm.** Inability to perform this task would lead to error with moderate adverse consequences.
- 4 = **Significant Harm.** Inability to perform this task would lead to error with major adverse consequences.
- 5 = **Extreme Harm.** Inability to perform this task would definitely lead to error with catastrophic consequences.

Frequency: Frequency is defined as the percent of time that the minimally competent STS-General Industry spends performing the duties or using the principles associated with each task statement. Rate each of the 12 task statements by indicating in the percent of time that a minimally competent STS-General Industry would spend performing duties within the task statement. **PLEASE MAKE THE PERCENTAGES YOU ASSIGN EACH TASK STATEMENT TOTAL 100 PERCENT FOR ALL 12 TASK STATEMENTS.** In the following table, write the percent of time that best exemplifies your frequency rating for each task statement.

Using the *Importance, Criticality, and Frequency* scales described on the previous pages and noted below, please rate the task statements.

Rating Scales

Importance	Criticality*
1 - Not important	1 - Causing no harm
2 - Somewhat important	2 - Causing minimal harm
3 - Important	3 - Causing moderate harm
4 - Very important	4 - Causing significant harm
5 - Extremely important	5 - Causing extreme harm

**the amount of harm that could be caused by performing the task incompetently*

Circle the number corresponding to the **Importance, Criticality,** and **Frequency** rating for each task statement.

Task Statement	Importance	Criticality	Frequency
<i>Task 1: Conduct job safety analyses by performing pre-task hazard analysis and by evaluating PPE, tools, equipment, and job expectations in order to identify potential hazards and reduce the risk of incident or injury.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 2: Monitor work practices by observing employees' behaviors and their use of PPE, tools, and equipment to reduce the risk of incident or injury and to comply with applicable standards.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 3: Enforce safety and health rules and regulations within the work group by coaching and correcting observed deficiencies or by taking appropriate disciplinary action in order to reduce the risk of incident or injury.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 4: Take appropriate action when confronted with problems by exercising stop-work authority, modifying tasks, elevating issues, consulting with qualified professionals (when the matter is outside the scope of the supervisor's capabilities), etc., in order to maintain a safe and healthful work environment.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 5: Facilitate a positive, pro-active safety culture by anticipating hazards, modeling and coaching safe behavior, promoting incident reporting, supporting employee participation, and communicating performance measures in order to enhance safety and health.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 6: Verify that work group employees are capable of performing work safely by reviewing their training records and job-specific qualifications in order to ensure competent staff.</i>	1 2 3 4 5	1 2 3 4 5	_____ %

Rating Scales

Importance	Criticality*
1 - Not important	1 - Causing no harm
2 - Somewhat important	2 - Causing minimal harm
3 - Important	3 - Causing moderate harm
4 - Very important	4 - Causing significant harm
5 - Extremely important	5 - Causing extreme harm

**the amount of harm that could be caused by performing the task incompetently*

Task Statement	Importance	Criticality	Frequency
<i>Task 7: Ensure that new personnel in the work area are oriented to safety and health considerations by communicating potential and existing hazards and monitoring behavior in order to make sure that applicable rules and emergency action plans are understood.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 8: Perform safety and health-related record keeping as required by company policy and regulations using established procedures to document essential processes.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 9: Participate in employee evaluation by including safety performance as a key criterion in order to hold employees accountable for safety.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 10: Participate in investigations that determine causes, identify corrective actions, and document lessons learned using recognized investigation techniques in order to reduce the risk of workplace incidents and address employee concerns.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 11: Implement emergency action plans in accordance with the nature of incidents in order to minimize potential losses.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
<i>Task 12: Interact with other work group supervisors using timely communication to coordinate operations and work processes and to minimize risk.</i>	1 2 3 4 5	1 2 3 4 5	_____ %
			100% TOTAL

Please list any tasks that you think may have been overlooked.
