



NREL Job Task Analysis: Crew Leader

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NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

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NREL Job Task Analysis–Crew Leader

Introduction

A Job Task Analysis is a foundation for any valid credentialing program and helps identify the core knowledge areas, critical work functions, and/or skills typically found across a representative sampling of current practitioners or job incumbent workers. Empirical results from a job analysis provide examinees and the public with a valid, reliable, fair, and realistic assessment that reflects the skills, knowledge, and abilities required to competently perform a job.

In July of 2010, a group of 12 Subject Matter Experts (SMEs) met to perform the Job Task Analysis and to create an examination blueprint that would serve as the basis for the worker certification. A trained psychometrician facilitated the meeting and helped guide the development of these analyses. In the fall of 2010, an online survey was administered to validate the results of the JTA and to finalize the examination blueprint. One hundred and fifteen Crew Leaders from across the United States responded to the survey.

This report contains the Crew Leader Specifications and a content outline. In addition, the attached Exam Blueprint builds on these specifications by providing the optimum percentage of exam questions that should be asked about each task.

Scope

A Crew Leader is a residential energy efficiency professional who is responsible for supervising the retrofitting activities specified in the scope of work. A committee of SMEs considered to be experts in the field created the Crew Leader Job Task Analysis.

This document is intended to include all of the tasks a Crew Leader may perform, as well as the knowledge, skills, and abilities required to do these tasks.

Please note that certification is not a license to practice. All certificants must comply with applicable federal, state, and local laws and regulations governing the profession.

Content

- A Job Task Analysis for a Crew Leader
- An Exam Blueprint for a Crew Leader

Crew Leader Specifications and Content Outline

Job Description: A *Crew Leader* is responsible for supervising the retrofitting activities specified in the scope of work. He or she is responsible for interacting with the client plus managing personnel and materials on the job site in a safe and effective manner. The Crew Leader is responsible for quality control, testing procedures, documentation, and conducting a final walk through to ensure that all work is completed in a satisfactory manner.

Domains/Tasks

Domain 1: Develop and/or Review the Work Order

Task 1: Identify and disperse necessary paperwork, (e.g. permits, releases, lead-based paint EPA requirements, historic preservation, etc.)

Task 2: Read, evaluate and discuss with relevant others (auditor, coordinator, program manager, etc.) both audit and homeowner concerns

Task 3: Develop strategy for corrective actions necessary to achieve goals

Task 4: Develop production schedule for crews and subs

Domain II: Identify materials and staffing needs

Task 1: Identify skill sets of individuals necessary for job (i.e. crew and contractors)

Task 2: Identify total hours and number of individuals necessary to safely complete the job

Task 3: Identify, obtain and maintain tools, equipment and materials necessary to complete job

Task 4: Identify Personal Protective Equipment (PPE) necessary for job

Domain III: Develop plan to execute work order on site

Task 1: Establish rapport and expectations with homeowner

Task 2: Conduct interior and exterior visual home inspection review with crew in order to confirm with client the completion of any prerequisite work

Task 3: Conduct interior and exterior visual home inspection review with crew in order to perform initial job site safety inspection

Task 4: Conduct interior and exterior visual home inspection review with crew in order to develop site-specific safety plan to address any unsafe conditions and possible hazards and inform crew

Task 5: Conduct interior and exterior visual home inspection review with crew in order to document pre-existing conditions (e.g. cracked window, cracked ceiling and walls)

Task 6: Conduct interior and exterior visual home inspection review with crew in order to ensure work areas are accessible and scoped properly

Task 7: Conduct interior and exterior visual home inspection review with crew in order to identify need for job change orders

Task 8: Conduct interior and exterior visual home inspection review with crew in order to adjust work schedule as needed

Task 9: Conduct informative walk through with homeowner to explain what crew will be doing and answer questions and concerns

Task 10: Conduct informative walk through with homeowner to verify specific homeowner issues (allergies, valuable items, etc.)

Task 11: Conduct informative walk through with homeowner to obtain all necessary sign-offs before work begins

Domain IV: Prepare house to execute work order
Task 1: Protect interior/exterior of house (e.g. with drop cloths, poly, Tyvek booties, pressurization)
Task 2: Set up proper containment, if necessary
Task 3: Test in (e.g. blower door, room to room pressure tests, IR scans, combustion appliances)
Task 4: Revise work order if necessary to reflect current conditions
Domain V: Execute work order and manage project
Task 1: Monitor safety practices for employees, contractors and job site
Task 2: Communicate with and support crew to ensure job efficiency (e.g. unforeseen circumstances, materials and tools not originally specified)
Task 3: Document work progression and work order changes with photos and notes
Task 4: Maintain quality control
Task 5: Clean up containment zones as necessary
Task 6: Communicate with homeowner as necessary
Task 7: Monitor use of resources (e.g. materials, manpower)
Task 8: Verify that installers track and document material usage
Task 9: Actively mentor crew (e.g. safety, work practices, professionalism)
Task 10: Monitor contractor for job site compliance
Task 11: Conduct daily final walk through to verify that all components of that day's work scope have been completed and cleaned up appropriately
Domain VI: Job finalization activities
Task 1: Walk through to verify that all components of the work scope have been completed
Task 2: Test out (e.g. blower door, IR scans, worst-case draft, combustion testing)
Task 3: Complete clean up
Task 4: Final walk through with homeowner/responsible party
Domain VII: Final Documentation
Task 1: Obtain homeowner/ responsible party job-completion sign-off signature
Task 2: Complete all final job documentation (e.g. materials, man hours, photos, time sheets, certified renovator signatures, information for inspectors)

Crew Leader Specifications and Content Outline

SAFE WORK PRACTICE SKILLS

Knowledge of:

- U.S. Department of Energy (DOE) program regulations/policy and Environmental Protection Agency (EPA) guidelines for asbestos, lead, mold, and other health hazards
- Material Safety Data Sheets
- Occupational Safety and Health Act (OSHA) standards
- Ladder safety
- Fall protection
- Personal protective equipment
- Respiratory protection
- Safe motor vehicle operation
- Power-operated tools and machinery used on the job site
- Fire prevention
- Permit-required confined spaces
- OSHA 30 Construction Safety Outreach Training
- Other worker-related OSHA standards (e.g. scaffolding, aerial lifts)

Demonstrate the ability to:

- Select and use the appropriate Personal Protection Equipment for a particular task
- Safely use basic hand and power tools
- Use a basic first aid kit to treat common job-site injuries
- Work lead safe
- Identify serious mold conditions
- Assess work area safety hazards
- Use CPR, first aid and AED as required

General Knowledge, Skills and Abilities

Knowledge of:

- Federal, state and local codes, regulations and requirements
- Building science (e.g. heat, moisture, pressure flow; ventilation; thermal and pressure boundary)
- Building techniques and terminology (e.g. critical junctures, flooring systems, crawl spaces, roof framing, mechanical systems)
- Building materials (e.g. dry wall, insulation, house wrap, windows)
- Retrofit techniques (e.g. air tightening, duct sealing, insulation)
- What certifications are required for each job task
- Material inventory and availability
- Material performance
- All activities being performed by crews and contractors on site

Ability to:

- Read and interpret the audit report
- Integrate information from multiple sources

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- Estimate time required to complete each component of the work scope
 - Sequence required tasks
 - Assess crew member and contractor capabilities
 - Estimate job and personnel requirements based on conditions
 - Estimate amount of materials needed to complete job
 - Communicate at an appropriate level (e.g. technical to layman level, language barriers)
 - Relate well with others in tactful and professional manner
 - Conduct oneself in an ethical manner
 - Identify materials and methods appropriate for the current job
 - Job coach and relay retrofit techniques appropriately
 - Install appropriate containment zones with best practices
 - Perform and record all diagnostic procedures (e.g. blower door, manometer, duct blower, combustion analyzer)
 - Assess skills and recommend additional formal training for crew and contractors
 - Manage multiple operations and/or tasks on the job site
 - Use construction math (e.g. measure and compute area, volume, circumference)
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Crew Leader Exam Blueprint

		Duties and Tasks	Final
A		Develop and/or Review the Work Order	12%
	1	Identify and disperse necessary paperwork, (e.g. permits, releases, lead-based paint EPA requirements, historic preservation, etc.)	3%
	2	Read, evaluate and discuss with relevant others (auditor, coordinator, program manager, etc.) both audit and homeowner concerns	3%
	3	Develop strategy for corrective actions necessary to achieve goals	3%
	4	Develop production schedule for crews and subs	3%
B		Identify materials and staffing needs	13%
	1	Identify skill sets of individuals necessary for job (i.e. crew and contractors)	3%
	2	Identify total hours and number of individuals necessary to safely complete the job	3%
	3	Identify, obtain and maintain tools, equipment and materials necessary to complete job	3%
	4	Identify Personal Protective Equipment (PPE) necessary for job	4%
C		Develop plan to execute work order on site	18%
	1	Establish rapport and expectations with homeowner	2%
	2	Conduct interior and exterior visual home inspection review with crew in order to confirm with client the completion of any prerequisite work	1%
	3	Conduct interior and exterior visual home inspection review with crew in order to perform initial job site safety inspection	2%
	4	Conduct interior and exterior visual home inspection review with crew in order to develop site-specific safety plan to address any unsafe conditions and possible hazards and inform crew	3%
	5	Conduct interior and exterior visual home inspection review with crew in order to document pre-existing conditions (e.g. cracked window, cracked ceiling and walls)	2%
	6	Conduct interior and exterior visual home inspection review with crew in order to ensure work areas are accessible and scoped properly	2%
	7	Conduct interior and exterior visual home inspection review with crew in order to identify need for job change orders	1%
	8	Conduct interior and exterior visual home inspection review with crew in order to adjust work schedule as needed	1%
	9	Conduct informative walk through with homeowner to explain what crew will be doing and answer questions and concerns	2%
	10	Conduct informative walk through with homeowner to verify specific homeowner issues (allergies, valuable items, etc.)	1%
	11	Conduct informative walk through with homeowner to obtain all necessary sign-offs before work begins	1%
D		Prepare house to execute work order	9%
	1	Protect interior/exterior of house (e.g. with drop cloths, poly, Tyvek booties, pressurization)	1%
	2	Set up proper containment, if necessary	4%
	3	Test in (e.g. blower door, room to room pressure tests, IR scans, combustion appliances)	3%
	4	Revise work order if necessary to reflect current conditions	1%
E		Execute work order and manage project	27%
	1	Monitor safety practices for employees, contractors and job site	5%
	2	Communicate with and support crew to ensure job efficiency (e.g. unforeseen circumstances, materials and tools not originally specified)	2%
	3	Document work progression and work order changes with photos and notes	2%

	4	Maintain quality control	3%
	5	Clean up containment zones as necessary	3%
	6	Communicate with homeowner as necessary	1%
	7	Monitor use of resources (e.g. materials, manpower)	2%
	8	Verify that installers track and document material usage	2%
	9	Actively mentor crew (e.g. safety, work practices, professionalism)	2%
	10	Monitor contractor for job site compliance	3%
	11	Conduct daily final walk through to verify that all components of that day's work scope have been completed and cleaned up appropriately	2%
F	12	Job finalization activities	14%
	1	Walk through to verify that all components of the work scope have been completed	3%
	2	Test out (e.g. blower door, IR scans, worst-case draft, combustion testing)	5%
	3	Complete clean up	3%
	4	Final walk through with homeowner/responsible party	3%
G		Final Documentation	7%
	1	Obtain homeowner/ responsible party job-completion sign-off signature	3%
	2	Complete all final job documentation (e.g. materials, man hours, photos, time sheets, certified renovator signatures, information for inspectors)	4%
			100%