

Lawrence Livermore National Laboratory

Skill of the Craft/Worker

August 30, 2011



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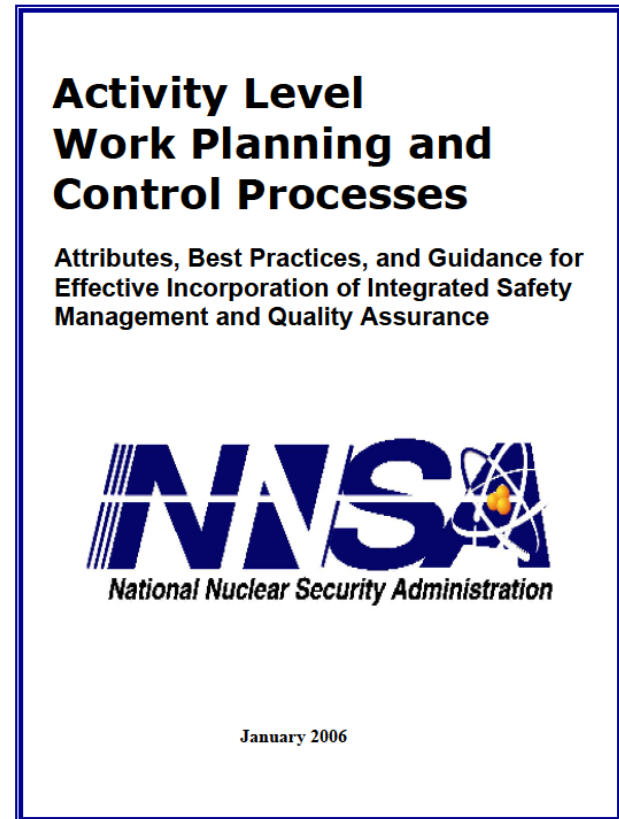
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LLNL-PRES-xxxxx

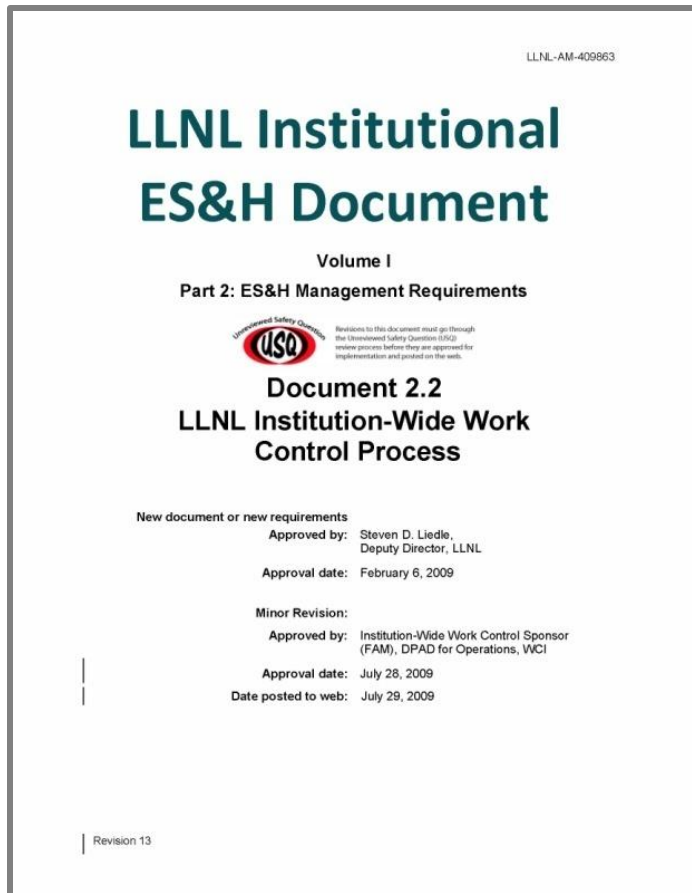
LLNL has established an Institution-Wide Work Planning & Control (I-WWP&C) Process

- LLNL implemented the attributes of an effective work planning and control process described in the NNSA Guide by issuing an LLNL *Institution-Wide Work Control Process Requirements Document*, dated July 30, 2008.
- The Requirements Document identifies the core requirements that apply to LLNL programs and service support organization activities.

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LLNL I-WWP&C Process is implemented through the ES&H Manual Document 2.2

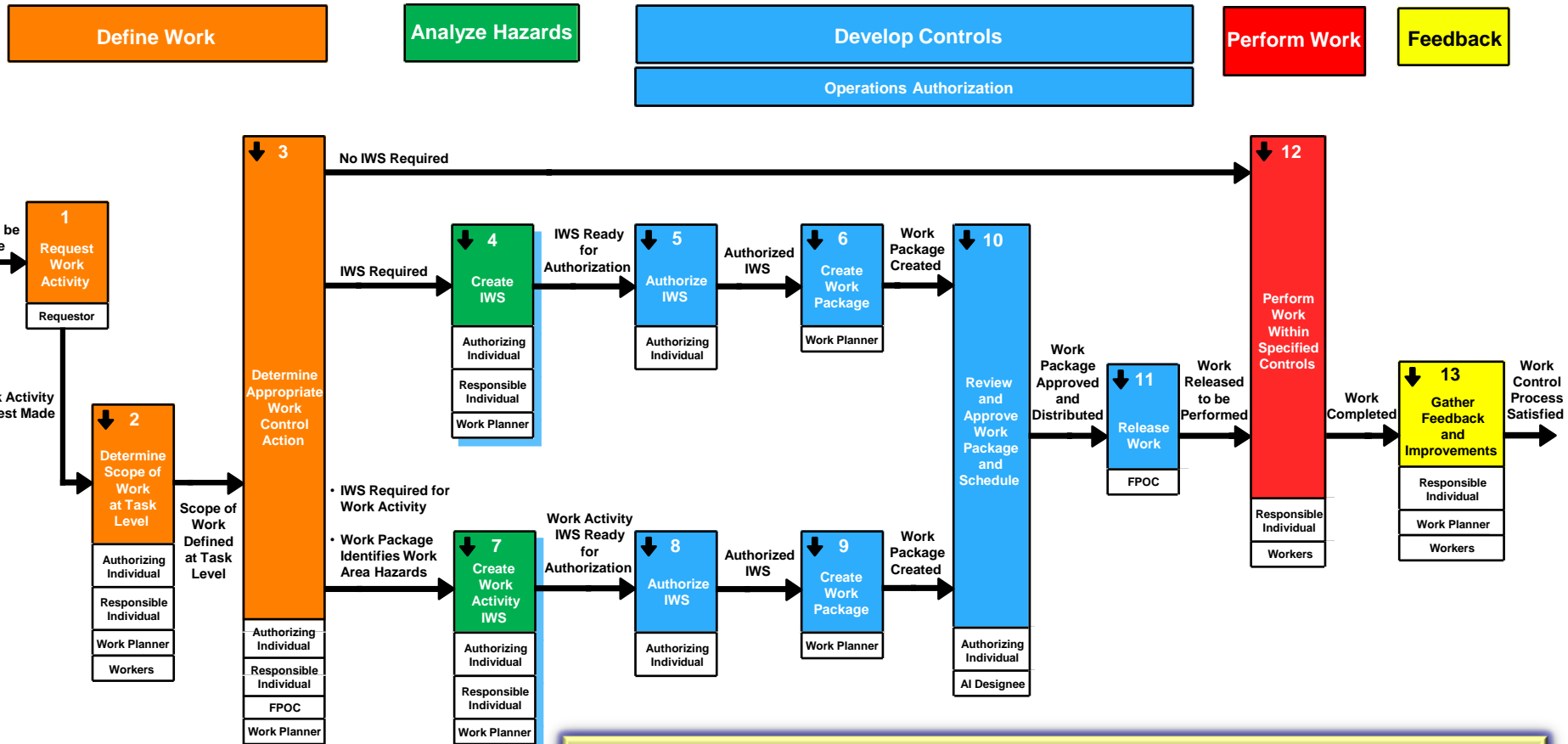


The ES&H Manual, Document 2.2, “*LLNL Institution-Wide Work Control Process*,” released February 2009, describes the process for LLNL programs and service support organizations to successfully implement the work planning and control requirements specified in the Requirements Document.

I-WWP&C was fully implemented at LLNL June 2009



Overview of the Work Control Process



Skill of the Craft Program has a grade approach on a defined set of tasks performed in facilities/areas that are low hazard or below



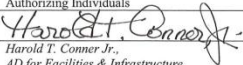
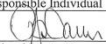


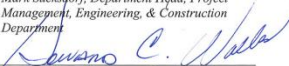
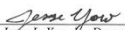

Facilities & Infrastructure (F&I) Work Control

LLNL Facilities & Infrastructure MAN-GWM-003

General Work Management Manual

Work Control

Revision 3
February 15, 2010

Authorizing Individuals	Responsible Individual
 Harold T. Conner Jr., AD for Facilities & Infrastructure	 Richard Davis, Department Head, Emergency Management Department
	 18-MAR-10 Carey Bailey, Acting Department Head, Facilities Management Department
	 Mark Sueksdorf, Department Hqld, Project Management, Engineering, & Construction Department
	 Howard Walls, Department Head, Maintenance & Utility Services Department
	 Jesse L. Yow Jr., Department Head, Environment Restoration Department
	 Robert Felicitas, Safety Manager Facilities & Infrastructure

Document Summary

This document describes the work control process used by Facilities and Infrastructure (F&I) personnel to manage and conduct construction, maintenance, repair and minor alteration activities on the facilities and infrastructure at LLNL

The F&I Work Control Manual describes how the F&I Directorate performs their work activities to successfully implement work planning and control process documented in the ES&H Manual Document 2.2.

This includes recognizing the Skill of the Craft program and Site-Wide IWSs for a defined set of tasks.



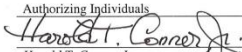

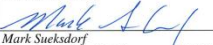
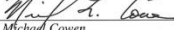
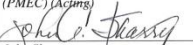

F&I Skill of the Craft Program

LLNL Facilities & Infrastructure MAN-GWM-0004

Work Management Manual

Skill of the Craft Manual

Revision 4
April 8, 2011

Authorizing Individuals	Responsible Individual
 Harold T. Conner Jr. AD for Facilities & Infrastructure Directorate (F&I)	 Howard C. Walls Deputy AD for Facilities & Infrastructure Directorate (F&I)
	 Mark Sueksdorf Department Head, Maintenance & Utility Services Department (MUSD) (Acting)
	 Michael Cowen Department Head, Project Management, Engineering, & Construction Department (PMEC) (Acting)
	 John Sharry Department Head, Emergency Management Department (EMD) (Acting)
	 Donna J. Governor Training Manager, F&I Directorate

Document Summary

This document describes the Skill of the Craft process that is implemented in the Facilities and Infrastructure Directorate (F&I).

The “*Skill of the Craft Manual*” defines the Skill of the Craft as a level of skills, knowledge, and abilities (SKA) required for the individual to qualify to perform a scope of work safely and effectively in facilities/areas that are low hazard or below based on their qualifications, training, experience and judgment.

The manual further describes the qualification requirements and process, and documentation requirements.



Scope of Skill of the Craft/Worker

- Typical Scope of Work that may be performed in facilities/areas that are low hazard or below are based on the SKAs for each craft and are described in the attachments to the manual.
- The description of the Scope of Work for each craft is based on a review of the relevant Classification Code and US Department of Labor Classification Code where applicable.

Example of LLNL – Journey Level Plumber/Pipefitter

LLNL Classification Code: **826.X series**

US Department of Labor Classification Code: **E585**

Scope

Layout, fabricate, install, maintain, and repair plant piping systems, fixtures, and related components designed to transport a variety of liquid and gaseous substances needed for sanitation, industrial productions, fire control, or other uses. Also alter and repair existing pipe systems and install plumbing fixtures, and heating and refrigerating units. Plan the methods and procedures required to complete installation and repair work on plant piping systems. Prepare isometric drawings showing measurements and details of layout obtained from blueprints and verbal instructions. Select correct tools and techniques for handling specified pipe by applying a thorough knowledge of types and schedules of pipe used.



Scope of Skill of the Craft/Worker

- Skill of the Craft/Worker scope of work should be graded based on a defined set of tasks that may be performed in facilities/areas that are low hazard or below (areas that are like those in Office, Light Science and Industry facilities) based on their knowledge, skills, and abilities, the qualification considerations, the qualification process, and the documentations.

For LLNL, these are documented in the F&I Work Control Manual.

Examples include;

Faucet repair

Drain stoppage

Backflow testing and repair

Fire riser maintenance

Single craft shutdowns for small scale leaks

Replacement or repair of plumbing fixtures



Hazard Analysis of the Skill of the Craft/Worker tasks

- The determination that tasks are “low hazard” is documented in a hazard analysis that clearly documents the basis for that determination and identifies the set of controls that workers are expected to implement during the performance of the task.
- That set of controls is used to determine subsequent qualification, training, requalification, and experience.
- The hazard analysis is available to workers and supervisors to review as necessary to ensure proposed work falls within the scope of that analysis.

For LLNL, the hazard analysis is performed through the Integrated Worksheet (IWS) process, and the IWS number is documented in the crafts’ section of the SoC Manual.



Qualification Considerations

- Qualification considerations for each of the crafts/workers should be delineated and include tool qualification, industry and trade qualifications (e.g. journey level, special licenses or certifications, familiarity with appropriate codes, and formal class room training), site/institutional training required to perform work, and specific required training to perform specific task work in specific location/area.
- Qualifications should include minimum year experience, such as on-the-job experience or journey-level certification through an approved apprenticeship program, formal class room training to qualify as a journey level craft/worker. Formal related training from a college or trade school should be evaluated for equivalence.



Example of LLNL Plumber/Pipefitter Qualification Considerations

Tools

Set up and operate a variety of hand and power tools and machines, such as but not limited to, threading machines, pipe and tube benders, abrasive cut off saw, oxy-acetylene cutting and heating equipment, pressure gauges, torches as well as, various welding machines and equipment.

Industry Trade Qualifications

Pipe layers, plumbers, pipe fitters, and steamfitters enter into the profession in a variety of ways. Most residential and industrial plumbers get their training in career and technical schools and community colleges and from on-the-job training. Armed Forces training in pipe laying, plumbing, and pipefitting are also considered very good preparation. Pipe layers, plumbers, pipe fitters, and steamfitters who work mainly for commercial enterprises are usually trained through formal apprenticeship programs to attain the Journey Level. Apprenticeships—both union and nonunion—consist of 4 or 5 years of on-the-job training, in addition to at least 144 hours per year of related classroom instruction.



Qualification Process

- Each craft/worker should be evaluated against the delineated qualifications by their first line supervisor to determine whether they qualify at the journey level.
- If the supervisor determines the person qualifies, he/she should document this on a Supervisor Evaluation of Technical Competencies form certifying the person's qualification.
- It is recommended that the next level of management reviews the supervisor's determination and must concur for the person to be authorized to perform work based on Skill of the Craft/Worker.
- New employees should be hired at the journey level whenever possible and be evaluated at 6 months and again at approximately 11 months to determine if they are eligible to qualify as journey-level Skill of the Craft/Worker.



Example of Skill of the Craft Qualification Card

Facility & Infrastructure Skill of the Craft Qual-Card

_____ has satisfactorily completed the qualification process, as delineated in the F&I Skill of the Craft Manual (MAN-GWM-0003) as a Journey level *Plumber/Pipe Fitter*.

Signature of Craft Person

Date

Signature of First Line Supervisor

Date

Signature of Next Line Supervisor

Date

- After the signed Craft Supervisor Evaluation of Technical Competencies is completed, a Skill of the Craft/Worker qualification card should be issued to the employee.
- At LLNL, this qualification card is to be placed with their site badge to have available upon request.



Documentation

- The scope of work and the qualification considerations for each type/discipline of the craft/worker should be documented with a clear description of their work tasks.
- Individuals need to be certified at the journey level only once for a particular craft/worker qualification.
- Annually, the individuals' qualifications should be reviewed by the supervisor at performance appraisal to verify the determination remains accurate and the employee clearly understands their work tasks, the hazards associated with the work tasks and the appropriate controls. This should be documented and the Supervisor is responsible to ensure that the individual worker reviews and signs the documentation.



Guidance for Skill of the Craft/Worker work activity

The following is guidance related to Skill of the Craft/Worker:

- The employee is qualified and may be authorized to perform Skill of the Craft/Worker tasks in low hazard areas based on their level of knowledge, skill and ability qualifying them to recognize the hazards, understand the appropriate controls, and perform work safely and effectively.
- Employees are responsible to carefully review their work area prior to starting work to ensure that all hazards and controls identified.
- Skill of the Craft/Worker does not exempt the Job Area Hazard Analysis process if the supervisor or the worker determines the work activity falls outside the scope of the documented hazard analysis. Workers and supervisors are mutually responsible to ensure worker assigned to perform Skill of the Craft/Worker tasks are current in their qualifications and training.



Individuals Not Qualified as Journey Level Craft/Worker

- Individuals who are not current in their qualifications for a task must work under the direct supervision of a person certified as journey level qualified.



Questions?

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