

Subject: Apprentice Machinist and Qualified Machinist Qualification	Effective Date: October 23, 2015	Initiated by: Larry Dudek Associate Laboratory Director, Engineering and Infrastructure
	Supersedes: Rev. 1, dated 10/26/11 and TCR- 001	Approved: Stewart Prager Director

Management System (Primary): 03.00 Engineering
Management System Owner: Associate Director for Engineering and Infrastructure
Management Process: 03.06 Technical Project Management
Process Owner: Associate Director for Engineering and Infrastructure
Sub-Process: 03.06.19 Human Resource Management
Sub-Process Owner: Associate Director for Engineering and Infrastructure
Subject Matter Experts (SMEs): Head, Facilities and Site Services

Applicability

This procedure applies to all individuals who will use machine tools at PPPL. Only PPPL Apprentice Machinists (Machine Tool Operators) and Qualified Machinists, who are trained and qualified per the requirements of this procedure, may operate machine tools at PPPL. This procedure contains the steps to become either an Apprentice Machinist or a Qualified Machinist.

Machine tools are defined as floor mounted professional machine tools. Tabletop or “hobby” tools, saws, and drill presses use by incidental users is covered by the safety training portion of this procedure and requires a basic safety checkout to be documented with Attachment 1 of this procedure to assure knowledge of the hazards associated with each piece of equipment.

Introduction

Prior to any machine tool operation, an individual’s training and qualification as a PPPL Apprentice Machinist or Qualified Machinist must be completed and documented.

This procedure identifies the skills and other requirements for qualification as a PPPL Qualified Machinist or Apprentice Machinist.

Casual machine tool operators such as students shall meet the minimum requirements for an Apprentice Machinist. Meeting the full requirements of this procedure are the minimum requirements for a Qualified (Journeyman level) Machinist as having the “skills of the trade” and he/she is therefore authorized to perform work accordingly.

Apprentice Machinists shall work under the direct field supervision of a Qualified Machinist at all times.

It is recognized that Machinists may become Qualified Machinists at PPPL via two different paths. The first path is to gain experience and skill over time and under the supervision of a Qualified Machinist. Generally, this path takes 8000 hours to complete. The second path is to

be hired with the documented experience and skills sufficient to be considered as a Qualified Machinist. This procedure defines the steps required for both paths.

All Machinists shall comply with PPPL Policy P-017, "Working Alone." The use of Emergency Dongles is permitted for Qualified Machinists only. No Apprentice Machinists shall ever work alone on machine tools.

References

Procedure TR-001, Laboratory Training Program
Procedure TR-006, Establishing Qualification and Certification Requirements
PPPL ESHD 5008
Policy P-017 Rev 4, Working Alone

Definitions & Acronyms

Apprentice – Someone who has met the requirements to be considered an apprentice and has not met the requirements to be qualified as a Machinist. An apprentice works under the direct field supervision of a qualified person.

Qualified Machinist – Someone who has been qualified by this procedure and has completed a minimum of 8,000 documented hours working as a Qualified (Journeyman level) Machinist or an Apprentice Machinist trainee.

Machine tool – Floor mounted professional machine tool equipment.

Supervision – The presence of a Qualified Machinist immediately present at all times.

LOTO – Lockout / Tagout

Incidental User – Someone that occasionally has the need to use specifically designated equipment that does not require Machinist Qualification.

Attachments

Attachment 1 Incidental Equipment User Summary of Table Top Tool, Drill Press, Saw, and Shear Safety Training

Attachment 2 Machinist Training and Skill Requirements Initial and Renewal Checklist for all Machinists

Attachment 3 Apprentice Machinist Safety Training Checklist

Attachment 4 Documented Experience Requirements for Qualified Machinists

Attachment 5 Machinist Summary of Qualification

Attachment 6 Sample Machine Tool Operator Safety Training Evaluation

Procedure

This procedure defines the steps required for safety training for incidental use of tabletop or “hobby” tools (saws and drill presses), to become an Apprentice Machinist, or a Qualified Machinist. The following equipment usage/qualification chart is provided as an aid to understanding which equipment requires which type of qualification and which attachment applies.

EQUIPMENT	Incidental User Qualify with Attachments 1 and 6	Apprentice Machinist Qualify with Attachments 2, 3 and 6	Qualified Machinist > 8000 Hours Qualify with Attachments 2, 4, 5 and 6	Qualified Machinist with resume Qualify with Attachments 2, 3, 4, 5 and 6
Bench Grinder	X	X	X	X
Belt Sander	X	X	X	X
Peck Stowe Shear	X	X	X	X
Band Saw	X	X	X	X
Wells cut off saw	X	X	X	X
Engine Lathe		X	X	X
Bridgeport Milling Machine		X	X	X
Remedy Milling Machine		X	X	X
HAAS Milling Machine			X	X
TRAK Milling Machine			X	X
Blanchard Grinder			X	X
Diamond Grinder			X	X
G&L Boring Mill			X	X
King Boring Mill			X	X
Sellers Boring Mill			X	X

Equipment Usage/Qualification Chart

Incidental Users must requalify every 3 years using Attachment 1

All machinists must requalify every 3 years using Attachment 2 (Sections 1 and 2)

A. Incidental Equipment User Safety Training

Incidental Users of non Machine Tool Equipment such as tabletop or “hobby” tools, saws, and drill presses need to have Safety Training prior to use of equipment.

<u>Responsibility</u>	<u>Action</u>
Incidental Equipment User	<ol style="list-style-type: none"> 1. Contacts Machine Shop Supervisor to obtain Safety Training for Table Top equipment, saws, and drill presses. 2. Fills out Incidental Equipment User Summary of Safety Training form (Attachment 1) indicating what equipment training is necessary. 3. Takes the required training, if any, for the equipment desired, and passes each test necessary with a score of at least 85%. Documents results on form.
Shop Supervisor	<ol style="list-style-type: none"> 4. Assigns Qualified Machinist to provide Safety Training on designated equipment.
Qualified Machinist	<ol style="list-style-type: none"> 5. Uses Attachment 6 to evaluate User, Fills out Attachment 1 indicating what Safety Training was provided. 6. Gives Attachment 1 to Shop Supervisor for review.
Shop Supervisor	<ol style="list-style-type: none"> 7. Reviews Attachment 1, signs and sends to Training Specialist for review and approval.
Training Specialist	<ol style="list-style-type: none"> 8. Approves, signs and files the form. 9. Creates an Incidental User Safety Training Qualification card and gives it to the Incidental Equipment User.

B. Machinist Initial Training and Skills Requirements and Requalification for all Machinists

Attachment 2 is used for initial qualification of all Machinists for all levels and for renewal of qualifications every 3 years. This form is to be combined with Attachment 3 for an Initial Apprentice Machinist qualification or with either Attachment 4 or Attachment 5 for an Initial Qualified Machinist qualification. **All levels of Machinists must re-qualify every 3 years.** Requalification requires only attachment 2 unless additional qualifications are to be granted.

<u>Responsibility</u>	<u>Action</u>
All Machinist Candidates	<ol style="list-style-type: none"> 1. Indicates on attachment 2 if this is an initial qualification or a requalification. 2. Takes the training listed on the Machinist Training and Skill Requirements Initial and Renewal Checklist for all Machinists (Attachment 2) and passes each test with a score of at least 85%. Documents results on form.

- | | |
|---------------------|--|
| | 3. Performs skill requirements (Attachment 2) as witnessed by a Qualified Machinist. Document results on form. |
| Shop Supervisor | 4. Evaluates and concurs with the Qualified Machinist assessment on Attachment 2. Signs and sends form to Training Specialist. |
| Training Specialist | 5. Assembles the qualification file upon successful completion of the Training and Skill requirements. |
| | 6. Signs Attachment 2 and files form. |

C. Qualification of an Apprentice Machinist

Used to qualify Apprentice Machinists.

Responsibility

Action

- | | |
|---|---|
| Apprentice Machinist Candidate | 1. Apprentice Machinist Candidate completes Section B of this procedure before completing this section to be eligible to be qualified as an Apprentice Machinist. |
| | 2. Obtains Equipment Safety Training on the equipment (s)he will be authorized to operate as witnessed by a Qualified Machinist using Attachment 6 to evaluate performance. |
| | 3. Documents equipment safety training on Attachment 3. |
| Qualified Machinist | 4. Signs form indicating what training has been provided. |
| Shop Supervisor | 5. Evaluates and concurs with the Qualified Machinist assessment on Attachment 3. Signs and sends form to Training Specialist. |
| Training Specialist | 6. Reviews and signs Attachment 3, creates a qualification card, and forwards the entire qualification package (Attachments 2 and 3) to the Head, Fabrication and Operations Division when the package is complete. |
| Head of the Fabrication and Operations Division | 7. Reviews the package and verifies that requirements have been adequately met. |
| | 8. Approves the package or notifies the Apprentice Machinist candidate and his supervisor of the areas which need further attention before the qualification can proceed. |
| | 9. Returns the completed, signed-off package to the Office of Human Resources for filing. |

D. Qualification of a Machinist

Part 1 - Qualification from Apprentice Machinist to Machinist based on training and skills obtained within PPPL with significant experience (8000 hours).

<u>Responsibility</u>	<u>Action</u>
Machinist Candidate	1. Machinist Candidate completes Section B of this procedure before completing this section to be eligible to be qualified as a Qualified Machinist. 2. Submits the Machinist Skill Requirements Checklist for Employees with 8000 Hours of Experience (Attachment 2) to a Qualified Machinist. Proficiency must be demonstrated to determine if supervision is required or not.
Qualified Machinist	3. Checks each box on the form indicating the required skill has been shown, determines if supervision is required and forwards to the Training Specialist.
Training Specialist	4. Signs Attachment 2 and attaches the form to the qualification file for the Machinist Candidate, upon successful completion of the Machinist skill requirements.
Machinist Candidate	5. Documents Experience Requirements on Attachment 4, attaches log book if possible, and submits to their Supervisor.
Machinist Candidate's Supervisor	6. Reviews the documented experience of the Machinist Candidate. Approves the documentation by signing the form and forwards the form to the Training Specialist.
Training Specialist	7. Signs Attachment 4 and attaches the form to the qualification file for the Machinist Candidate.
Machinist Candidate	8. Submits the Machinist Summary of Qualification (Attachment 5) as witnessed by a Qualified Machinist to the Candidate's Supervisor. Proficiency must be demonstrated to determine if supervision is required or not.
Qualified Machinist	9. Fills out Attachment 5 for each type of equipment desired and based on proficiency determines if supervision is required and forwards to the Machinist Candidate's Supervisor.
Candidate's Supervisor	10. Evaluates and concurs with the Qualified Machinist assessment on Attachment 5 and signs and forwards form to Training Specialist.
Training Specialist	11. Reviews and signs Attachment 5, creates a qualification card, and forwards the entire qualification package (Attachments 2, 4, and 5) to the Head, Fabrications and Operations Division when the package is complete.
Head of the Fabrication and Operations Division	12. Reviews the package and verifies that requirements have been adequately met.

- 13. Approves the package or notifies the Machinist Candidate and his supervisor of the areas that need further attention before the qualification can proceed.
- 14. Returns the completed, signed-off package to the Office of Human Resources for filing.

Part 2 - Documentation and Qualification of an Apprentice Machinist based on training and skills obtained outside of PPPL.

Responsibility

Action

- | | |
|-----------------------------------|--|
| Machinist Candidate | 1. Completes all of the requirements of Section B of this Procedure prior to being considered as a Qualified Machinist. |
| | 2. Documents Experience Requirements on Attachment 4, attaches log book if possible, and submits to their Supervisor. |
| | 3. If the candidate meets the requirements as a qualified machinist, attaches documentation such as a resume or logbook supporting the fact that the individual has obtained the required skills including documentation that the individual has completed the required on-the-job training hours for the basic skills and fills out Attachment 4. |
| Machinists Candidate's Supervisor | 4. Reviews the documented experience of the Machinist Candidate. Approves the documentation by signing the form and forwards the form to the Training Specialist. |
| Training Specialist | 5. Signs Attachment 4 and attaches the form to the qualification file for the Machinist Candidate. |
| Machinist Candidate | 6. Submits the Machinist Summary of Qualification (Attachment 5) to a Qualified Machinist and the candidate's supervisor. Proficiency must be demonstrated to determine if supervision is required or not. |
| Qualified Machinist | 7. Provides Safety Training on equipment, evaluates performance using Attachment 6 and completes Attachment 3 for Machinist Candidate. |
| | 8. Fills out Attachment 5 for each type of equipment desired and based on proficiency determines if supervision is required and forwards to the Machinist Candidate's Supervisor. |
| Candidate's Supervisor | 9. Evaluates and concurs with the Qualified Machinist assessment on Attachment 5 and signs and forwards form to Training Specialist. |
| Training Specialist | 10. Reviews and signs Attachment 5 upon successful completion of the qualification requirements. |
| | 11. Creates a qualification card, and forwards the entire qualification package (Attachments 2, 3, 4 and 5) to the Head, Fabrications and Operations Division when the package is complete. |
| Head of the Fabrication and | 12. Reviews the package and verifies that requirements have been adequately met. |

Operations Division

- 13. Approves the package or notifies the Machinist candidate and his supervisor of the areas which need further attention before the qualification can proceed.
- 14. Returns the completed, signed-off package to the Office of Human Resources for filing.

Training (Section Required for All Procedures)

Head of the
Fabrication and
Operations Division

- 1. Distributes the procedure to designated personnel.
A. Target Audience: All supervisors
 Instructor: Head of the Fabrication and Operations Division
 Training Method:
 Read only
 Email distribution only
 Frequency:
 Once only

Records Requirements Specific To This Procedure

Records Custodians must assure records are maintained as follows:

Record Title	Record Custodian	Location	Retention Time
Incidental Equipment User Summary of Table Top Tool, Drill Press, Saw, and Shear Safety Training	Human Resources	Personnel files	Cut off at the time of separation or transfer of the employee. Screen out and destroy all item 29.1.a.(4) records. Transfer folders with remaining documents to the local Federal Records Center. Destroy 4 years after cutoff. - All other performance plans and ratings. Hold indefinitely – DOE <small>Reference Admin 1 Personnel Records (29.1.a)</small>
Machinist Training and Skill Requirements Initial and Renewal Checklist for all Machinists	Human Resources	Personnel files	Cut off at the time of separation or transfer of the employee. Screen out and destroy all item 29.1.a.(4) records. Transfer folders with remaining documents to the local Federal Records Center. Destroy 4 years after cutoff. - All other performance plans and ratings. Hold indefinitely – DOE <small>Reference Admin 1 Personnel Records (29.1.a)</small>
Apprentice Machinist Safety Training Checklist	Human Resources	Personnel files	Cut off at the time of separation or transfer of the employee. Screen out and destroy all item 29.1.a.(4) records. Transfer folders with remaining documents to the local Federal Records Center. Destroy 4 years after cutoff. - All other performance plans and ratings. Hold indefinitely – DOE <small>Reference Admin 1 Personnel Records (29.1.a)</small>

<p>Machinist Skill Requirements Checklist for Employees 8000 Hours Experience to become a Qualified Machinist</p>	<p>Human Resources</p>	<p>Personnel files</p>	<p>Cut off at the time of separation or transfer of the employee. Screen out and destroy all item 29.1.a.(4) records. Transfer folders with remaining documents to the local Federal Records Center. Destroy 4 years after cutoff. - All other performance plans and ratings. Hold indefinitely – DOE Reference Admin 1 Personnel Records (29.1.a)</p>
<p>Documented Experience Requirements for Qualified Machinists</p>	<p>Human Resources</p>	<p>Personnel files</p>	<p>Cut off at the time of separation or transfer of the employee. Screen out and destroy all item 29.1.a.(4) records. Transfer folders with remaining documents to the local Federal Records Center. Destroy 4 years after cutoff. - All other performance plans and ratings. Hold indefinitely – DOE Reference Admin 1 Personnel Records (29.1.a)</p>
<p>Machinist Summary of Qualification</p>	<p>Human Resources</p>	<p>Personnel files</p>	<p>Cut off at the time of separation or transfer of the employee. Screen out and destroy all item 29.1.a.(4) records. Transfer folders with remaining documents to the local Federal Records Center. Destroy 4 years after cutoff. - All other performance plans and ratings. Hold indefinitely – DOE Reference Admin 1 Personnel Records (29.1.a)</p>

**Incidental Equipment User Summary of Table Top Tool, Drill Press,
Saw, and Shear Safety Training**

Attachment 1

Summary of Safety Training for: _____
Name

- Initial Safety Training
- Renewal Safety Training

Part 1

Training / Course Requirements (all required):

- Electrical Power Operator or Electrical Utilization training date: _____
- Lockout / Tagout training date: _____

Part 2

Equipment qualified to operate by demonstrated proficiency (not all required) – that only requires Safety Training

ITEM:

Qualified Machinist Initials:

- | | |
|--|-------|
| <input type="checkbox"/> Bench Grinder and Belt Sander | _____ |
| <input type="checkbox"/> Drill press | _____ |
| <input type="checkbox"/> Shear | _____ |
| <input type="checkbox"/> Band saw | _____ |
| <input type="checkbox"/> Cut-off saw | _____ |
| <input type="checkbox"/> _____ | _____ |
| <input type="checkbox"/> _____ | _____ |
| <input type="checkbox"/> _____ | _____ |
| <input type="checkbox"/> _____ | _____ |

Reviewed: _____
Shop Supervisor

_____ date

Approved: _____
Training Specialist

_____ date

**Machinist Training and Skill Requirements Initial and Renewal
Checklist for all Machinists**

Attachment 2

Machinist Training and Skill Requirements Checklist for:

_____ Name

- Initial Qualification
- Requalification

NOTE: There are Three (3) PARTS to this checklist

PART 1 - Training Requirements for Apprentice and Qualified Machinist qualification

Minimum Education:

- High School / Vocational School Diploma or G.E.D.

Training / Course Requirements (all required):

- Electrical Power Operator or Electrical Utilization training date: _____
- Lockout / Tagout training date: _____
- Machine Tool Operator Safety Training date: _____

Additional Expertise Areas (not necessarily required):

Note: Individuals must have CAM (Computer Automated Machine) training to use CAM tools.

- CAM Training date: _____

Reviewed: _____
Training Specialist date

PART 2 - Skill Requirements for Apprentice and Qualified Machinist:

- Demonstrated proper performance of electrical disconnect operation
- Demonstrated safe fabrication of parts (may be previous performance or part of the Machine Tool Operator Safety Training Course) using equipment desired to be qualified to use. Initial each piece of equipment on Attachment 3.

Witness: _____
Qualified Machinist date

Reviewed: _____
Shop Supervisor date

Reviewed: _____
Training Specialist date

PART 3 - Skill Requirements for a Qualified Machinist – Continued Below

The following is a skills checklist to be used by a Qualified Machinist to verify competency at the Journeyman (skill-of-the-trade) level.

MEASURING UNITS:

- DEMONSTRATE AN UNDERSTANDING OF SYMBOLS AND ABBREVIATIONS USED ON DRAWINGS
- DEMONSTRATE AN UNDERSTANDING OF MEASURING UNITS
- PERFORM U.S. AND METRIC SYSTEM CONVERSIONS

DIMENSIONING, GAGING, AND MEASURING:

- DEMONSTRATE DRAWING/BLEUPRINT READING
- DEMONSTRATE AN UNDERSTANDING OF DRAFTING PRACTICES
- DESCRIBE USE OF GEOMETRY AND TRIGONOMETRY IN DETERMINING MEASUREMENTS FROM DRAWINGS
- DESCRIBE ALLOWANCES AND TOLERANCES FOR FITS
- DEMONSTRATE AN UNDERSTANDING OF MEASURING INSTRUMENTS AND INSPECTION METHODS
- DESCRIBE SURFACE TEXTURES

PROPERTIES, TREATMENT, AND TESTING OF MATERIALS:

- DESCRIBE THE PROPERTIES OF ELEMENTAL MATERIALS, METALS, AND NONFERROUS ALLOYS THAT AFFECT MACHINING OPERATIONS
- DESCRIBE THE PROPERTIES OF WOOD, CERAMICS, PLASTICS THAT AFFECT MACHINING OPERATIONS
- DESCRIBE THE DIFFERENT MACHINABILITY OF MATERIALS
- DESCRIBE THE USE OF STANDARD STEELS
- DESCRIBE THE USE OF TOOL STEELS

DEMONSTRATE FAMILIARITY WITH EACH OF THE FOLLOWING MANUFACTURING PROCESSES:

- PUNCHES, DIES, AND PRESS WORK
- IRON AND STEEL CASTINGS
- SOLDERING AND BRAZING
- FINISHING OPERATIONS

DEMONSTRATE FAMILIARITY WITH EACH OF THE FOLLOWING TOOLING AND TOOLMAKING TECHNIQUES:

- CUTTING TOOLS
- CEMENTED CARBIDES
- FORMING TOOLS
- MILLING CUTTERS
- REAMERS
- TWIST DRILLS AND COUNTERBORES
- TAPS
- STANDARD TAPERS
- ARBORS, CHUCKS, AND SPINDLES
- BROACHES AND BROACHING
- FILES AND BURS
- TOOL WEAR AND SHARPENING

DEMONSTRATE FAMILIARITY WITH EACH OF THE FOLLOWING MACHINING OPERATIONS:

- MATERIAL CLAMPING TECHNIQUES
- CUTTING SPEEDS AND FEEDS
- SPEED AND FEED TABLES
- ESTIMATING SPEEDS AND MACHINING POWER
- MACHINING ECONOMETRICS
- SCREW MACHINE FEEDS AND SPEEDS
- CUTTING FLUIDS
- MACHINING NONFERROUS METALS AND NONMETALLIC MATERIALS
- GRINDING FEEDS AND SPEEDS
- GRINDING AND OTHER ABRASIVE PROCESSES
- KNURLS AND KNURLING
- MACHINE TOOL ACCURACY
- CNC NUMERICAL CONTROL PROGRAMMING
- MILL OPERATION AND SAFETY CONCERNS
- LATHE OPERATION AND SAFETY CONCERNS

DEMONSTRATE FAMILIARITY WITH EACH OF THE FOLLOWING THREAD TYPES AND THREADING TECHNIQUES:

- SCREW THREAD SYSTEMS
- UNIFIED SCREW THREADS
- CALCULATING THREAD DIMENSIONS
- METRIC SCREW THREADS
- ACME SCREW THREADS
- BUTTRESS THREADS
- WHITWORTH THREADS
- PIPE AND HOSE THREADS
- OTHER THREADS
- MEASURING SCREW THREADS
- TAPPING AND THREAD CUTTING
- THREAD ROLLING
- THREAD GRINDING
- THREAD MILLING
- SIMPLE, COMPOUND, DIFFERENTIAL, AND BLOCK INDEXING

DEMONSTRATE FAMILIARITY WITH FABRICATION TECHNIQUES FOR EACH OF THE FOLLOWING FASTENERS:

- DISTINGUISHING BOLTS FROM SCREWS
- TORQUE AND TENSION IN FASTENERS
- INCH THREADED FASTENERS
- METRIC THREADED FASTENERS
- HELICAL COIL SCREW THREAD INSERTS
- BRITISH FASTENERS
- MACHINE SCREWS AND NUTS
- CAP AND SET SCREWS
- SELF-THREADING SCREWS
- T-SLOTS, BOLTS, AND NUTS
- RIVETS AND RIVETED JOINTS
- PINS AND STUDS
- RETAINING RINGS

DEMONSTRATE FAMILIARITY WITH FABRICATION TECHNIQUES FOR EACH OF THE FOLLOWING GEARS, SPLINES, AND CAMS:

- GEARS AND GEARING
- HYPOID AND BEVEL GEARING
- WORM GEARING
- HELICAL GEARING
- OTHER GEAR TYPES
- CHECKING GEAR SIZES
- GEAR MATERIALS
- SPLINES AND SERRATIONS
- CAMS AND CAM DESIGN

DEMONSTRATE FAMILIARITY WITH FABRICATION TECHNIQUES FOR EACH OF THE FOLLOWING MACHINE ELEMENTS:

- PLAIN BEARINGS
- BALL, ROLLER, AND NEEDLE BEARINGS
- LUBRICATION
- KEYS AND KEYSEATS
- FLEXIBLE BELTS AND SHEAVES
- BALL AND ACME LEADSCREWS
- ROLLED STEEL, WIRE, AND SHEET-METAL
- SHAFT ALIGNMENT

Witnessed: _____
Qualified Machinist_____
dateReviewed: _____
Training Specialist_____
date

Equipment Safety Training performed for Apprentice Machinists (not all required)**ITEM:****Qualified Machinist Initials** Bench Grinder and Belt Sander

 Drill press

 Shear

 Band saw

 Cut-off saw

 Engine Lathe \geq 8x45

 Bridgeport Milling Machine

 Remedy Milling Machine

Signatures below confirm the named individual above has completed the requirements to be considered as an Apprentice Machinist.

Witness:

Qualified Machinist_____
date

Reviewed:

Shop Supervisor_____
date

Reviewed:

Training Specialist_____
date

Approved:

Fabrication and Operations Division Head_____
date

Machinist Qualification Checklist for: _____

Name

Requirements for Qualified Machinists based on experience

Machinists shall define approximately 8,000 hours on any combination of the following machine tools in order to be a fully Qualified Machinist. Machinists may define approximately 1,000 hours on any one of the following machine tools in order to be a Qualified Machinist on that machine tool.

Part 1 – Summary of Hours**ITEM:****SUMMARY OF HOURS:**

- | | |
|---|-------|
| <input type="checkbox"/> Blanchard or Diamond grinder | _____ |
| <input type="checkbox"/> Horizontal Boring Mills | _____ |
| <input type="checkbox"/> Vertical Boring Mills | _____ |
| <input type="checkbox"/> Bridgeport Milling Machines | _____ |
| <input type="checkbox"/> CNC (HAAS/TRAK) Milling Machines | _____ |
| <input type="checkbox"/> Vertical Turret Lathes | _____ |
| <input type="checkbox"/> Engine Lathes \geq 8x45 | _____ |

Part 2 – Supporting Documentation

List any documentation supporting the summary of hours (i.e. Journeyman's card, resume, major projects, evaluations, etc.):

- _____
- _____
- _____
- _____
- _____

Submitted: _____
Candidate's Supervisor _____
date

Reviewed: _____
Training Specialist _____
date

Recommended: _____
Candidate's Division Head _____
date

Approved: _____
Fabrication and Operations Division Head _____
date

Machinist Summary of Qualification for: _____**Name****Part 1 - Equipment qualified to operate by demonstrated proficiency (not all required)****ITEM:****Qualified Machinist Initials:**

- | | |
|--|-------|
| <input type="checkbox"/> Bench Grinder and Belt Sander | _____ |
| <input type="checkbox"/> Drill press | _____ |
| <input type="checkbox"/> Shear | _____ |
| <input type="checkbox"/> Band saw | _____ |
| <input type="checkbox"/> Cut-off saw | _____ |
| <input type="checkbox"/> Engine Lathe $\geq 8 \times 45$ | _____ |
| <input type="checkbox"/> Bridgeport Milling Machine | _____ |
| <input type="checkbox"/> Remedy Milling Machine | _____ |
| <input type="checkbox"/> Blanchard grinder | _____ |
| <input type="checkbox"/> Diamond grinder | _____ |
| <input type="checkbox"/> G&L boring mill | _____ |
| <input type="checkbox"/> King boring mill | _____ |
| <input type="checkbox"/> Sellers boring mill | _____ |

Part 2 - Equipment that requires a Qualified Machinist with CAM training to operate

- | | |
|--|-------|
| <input type="checkbox"/> HAAS milling machine | _____ |
| <input type="checkbox"/> TRAK milling machines | _____ |

Witnessed: _____	_____
Qualified Machinist	date

Submitted: _____	_____
Candidate's Supervisor	date

Reviewed: _____	_____
Training Specialist	date

Recommended: _____	_____
Candidate's Division Head	date

Approved: _____	_____
Fabrication and Operations Division Head	date

Contact Human Resources for the current version of this Form

Operator's Name _____ Date _____
(Please Print)

Instructor _____ Supervisor _____
(Please Print) (Please Print)

For each statement below, check (✓) either S (Satisfactory) or U (Unsatisfactory).

	S	U
1. Read Posted SAFETY Operating Procedure.	_____	_____
2. Wear proper PPE.	_____	_____
a. Safety Glasses.	_____	_____
b. Safety shoes.	_____	_____
3. Proper and safe setup of parts in tool.	_____	_____
a. Hold part securely via vise.	_____	_____
b. Hold part securely via angle plate.	_____	_____
4. Demonstrate proper care around tool.	_____	_____
a. Loose personal articles secured or removed.	_____	_____
b. Work area clear from obstructions or hazards.	_____	_____
5. Started machine tool properly.	_____	_____
a. Operated the axes travel properly.	_____	_____
b. Controlled Inching.	_____	_____
c. Maintained proper speed control.	_____	_____
6. Stop (secure) machine tool properly.	_____	_____
7. Demonstrate proper performance of electrical disconnect operation.	_____	_____

Restrictions: _____

Comments: _____
(List Machine Tools used for training)

Approved by: _____
Instructor's Signature