



# Registered Apprenticeship Standards For Programs with Collective Bargaining Agreements

☐ National Program Standards

☒ National Guidelines for Apprenticeship Standards

☐ Local Apprenticeship Standards

***International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers, and Helpers  
and***

***Employers in the Field Erection and Repair Industry***

***And the***

***Boilermakers National Joint Apprenticeship Board (Boilermakers)***

**BOILERMAKER**

**O\*NET-SOC Code: 47-2011.00 RAPIDS Code: 0041**

Developed in Cooperation with the  
U.S. Department of Labor  
Office of Apprenticeship

Approved by the  
U.S. Department of Labor  
Office of Apprenticeship

Registered By: \_\_\_\_\_

(For Government Use Only)

Signature: \_\_\_\_\_

(Sign here for National or Local  
Apprenticeship Standards)

Title: \_\_\_\_\_

Office of Apprenticeship, \_\_\_\_\_

Date: \_\_\_\_\_

Registration Number: \_\_\_\_\_

Certified By: JOHN V. LADD

(For Government Use Only)

Signature: John V. Ladd

(Sign here for National Guidelines  
for Apprenticeship Standards Only)

Title: Administrator

Office of Apprenticeship \_\_\_\_\_

Date: October 4, 2021

Certification Number: C-2022-01

☒ Check here if these are revised standards



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### SECTION I – STANDARDS OF APPRENTICESHIP 29 CFR § 29.5

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**A. Responsibilities of the sponsor:** *The Boilermakers* must conduct, operate, and administer this program in accordance with all applicable provisions of Title 29 Code of Federal Regulations (CFR) part 29, subpart A and part 30, and all relevant guidance issued by the Office of Apprenticeship (OA). The sponsor must fully comply with the requirements and responsibilities listed below and with the requirements outlined in the document “Requirements for Apprenticeship Sponsors Reference Guide.”

**Sponsors shall:**

- Ensure adequate and safe equipment and facilities for training and supervision and provide safety training for apprentices on-the-job and in related instruction.
- Ensure there are qualified training personnel and adequate supervision on the job.
- Ensure that all apprentices are under written apprenticeship agreements incorporating, directly or by reference, these standards and the document “Requirements for Apprenticeship Sponsors,” and that meets the requirements of 29 CFR § 29.7. Sponsors may utilize Form ETA 671 for this purpose and is available upon logging into RAPIDS.
- Register all apprenticeship standards with the U.S. Department of Labor, including local variations, if applicable.
- Submit apprenticeship agreements within 45 days of enrollment of apprentices.
- Arrange for periodic evaluation of apprentices’ progress in skills and technical knowledge, and maintain appropriate progress records.
- Notify the U.S. Department of Labor within 45 days of all suspensions for any reason, reinstatements, extensions, transfers, completions and cancellations with explanation of causes. Notification may be made in RAPIDS or using the contact information in Section K.
- Make a good faith effort to obtain approval for educational assistance for a veteran or other individual eligible under chapters 30 through 36 of title 38, United States Code, and will not deny the application of a qualified candidate who is a veteran or other individual eligible for educational assistance described in the above for the purpose of avoiding making a good faith effort to obtain approval.



- Provide each apprentice with a copy of these standards, Requirements for Apprenticeship Sponsors Reference Guide, and Appendix A, any applicable written rules and policies, and require apprentices to sign an acknowledgment of their receipt. If the sponsor alters these standards or any Appendices to reflect changes it has made to the apprenticeship program, the sponsor will obtain approval of all modifications from the Registration Agency, then provide apprentices a copy of the updated standards and Appendices and obtain another acknowledgment of their receipt from each apprentice.

**B. Minimum Qualifications - 29 CFR §29.5(b)(10)**

An apprentice must be at least 18 years of age, except where a higher age is required by law, and must be employed to learn an apprenticeable occupation. Please include any additional qualification requirements as appropriate (optional):

☒ There is an educational requirement of High school diploma or GED

☒ There is a physical requirement of: Applicants will be physically capable of performing the essential functions of the apprenticeship program, with or without a reasonable accommodation, and without posing a direct threat to the health and safety of the individual or others. Applicants will pass a screen for the current illegal use of drugs on acceptance into the program within forty-eight (48) hours after signing the apprenticeship agreement and prior to being employed. Applicants shall be subject to subsequent tests for drug/alcohol use on an annual, random, reasonable suspicion, and per cause basis thereafter.

☐ The following aptitude test(s) will be administered \_\_\_\_\_

☐ A valid driver's license is required.

☒ Other: Upon application to the Program, an applicant must demonstrate that he/she has access to reliable transportation. For purposes of this requirement, the term reliable transportation shall mean any form of transportation that permits the apprentice to attend work and any required classroom instruction held in the geographic jurisdiction of the Program.

**C. Apprenticeship Approach and Term - 29 CFR § 29.5(b)(2)**

The apprenticeship program(s) will select an apprenticeship training approach. See Appendix A to select approach.

**D. Work Process Schedule and Related Instruction Outline - 29 CFR § 29.5(b)(4)**

Every apprentice is required to participate in related instruction in technical subjects related to the occupation. Apprentices ☒ **will not** be paid for hours spent attending related instruction classes. Insert Work Process Schedule and Related Instruction Outline at Appendix A.

**E. Credit for Previous Experience - 29 CFR § 29.5(b)(12)**

Apprentice applicants seeking credit for previous experience gained outside the apprenticeship program must furnish such transcripts, records, affidavits, etc. that may be appropriate to substantiate the claim. The Boilermakers will evaluate the request for credit and make a determination during the apprentice's probationary period.



Additional requirements for an apprentice to receive credit for previous experience (optional): \_\_\_\_\_

\_\_\_\_\_

**F. Probationary Period – 29 CFR § 29.5(b)(8) and (20)**

Every applicant selected for apprenticeship will serve a probationary period which may not exceed 25 percent of the length of the program or 1 year whichever is shorter. Please see Appendix A for probationary period.

**G. Ratio of Apprentices to Journeyworkers - 29 CFR § 29.5(b)(7)**

Every apprenticeship program is required to provide an apprenticeship ratio of apprentices to journeyworkers for adequate supervision. Please see Appendix A for ratio.

**H. Apprentice Wage Schedule - 29 CFR § 29.5(b)(5)**

Apprentices must be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate. Please see Appendix A for the progressive wage schedule.

**I. Equal Employment Opportunity and Affirmative Action**

**1. Equal Opportunity Pledge - 29 CFR §§ 29.5(b)(21) and 30.3(c)(1)**

The Boilermakers will not discriminate against apprenticeship applicants or apprentices based on race, color, religion, national origin, sex (including pregnancy and gender identity), sexual orientation, genetic information, or because they are an individual with a disability or a person 40-years old or older.

The Boilermakers will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required under Title 29 of the Code of Federal Regulations, part 30.

[Optional] The equal opportunity pledge applies to the following additional protected bases (as applicable per the sponsor's state or locality):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2. Affirmative Action Program - 29 CFR §§ 29.5(b)(21), 30.4-30.9**

The Boilermakers acknowledges that it will adopt an affirmative action plan in accordance with Title 29 CFR § 30.4-30.9 (required for sponsors with five or more registered apprentices by two years from the date of the sponsor's registration or by two years from the date of registration of the program's fifth (5<sup>th</sup>) apprentice). Information and technical assistance materials relating to the creation and maintenance of an affirmative action plan will be made available on the Office of Apprenticeship's website.



### 3. Selection Procedures - 29 CFR § 30.10

Every sponsor will adopt selection procedures for their apprenticeship programs, consistent with the requirements set forth in 29 CFR § 30.10(b). See Appendix A to enter your selection procedures for each occupation for which the sponsor intends to train apprentices.

### J. Complaint Procedures - 29 CFR §§ 29.5(b)(22), 29.7(k), 29.12, and 29 CFR § 30.14

If an applicant or an apprentice believes an issue exists that adversely affects the apprentice's participation in the apprenticeship program or violates the provisions of the apprenticeship agreement or standards, the applicant or apprentice may seek relief. Nothing in these complaint procedures precludes an apprentice from pursuing any other remedy authorized under another Federal, State, or local law. Below are the methods by which apprentices may send a complaint:

For all issues covered by a Collective Bargaining Agreement (CBA), apprentices must seek resolution through the applicable procedures contained in the CBA. (*if applicable, see Requirements for Apprenticeship Sponsors Reference Guide*)

- 1. Complaints regarding discrimination.** Complaints must contain the complainant's name, address, telephone number, and signature, the identity of the respondent, and a short description of the actions believed to be discriminatory, including the time and place. Generally, a complaint must be filed within 300 days of the alleged discrimination. Complaints of discrimination should be directed to the following contact:

*U.S. Department of Labor, Office of Apprenticeship*

*200 Constitution Ave. NW, Washington, DC, 20210*

*Telephone Number: (202) 693-2796*

*Email: Address: ApprenticeshipEEOcomplaints@dol.gov*

*Point of Contact: Director, Division of Registered Apprenticeship and Policy*

*Attn: Apprenticeship EEO Complaints*

You may also be able to file complaints directly with the EEOC, or State fair employment practices agency.

- 2. Other General Complaints.** The sponsor will hear and attempt to resolve the matter locally if written notification from the apprentice is received within 15 days of the alleged violation(s). The sponsor will make such rulings as it deems necessary in each individual case within 30 days of receiving the written notification:

*Name: Mark Wertz, National Apprenticeship Coordinator*

*Address: 12200 NW Ambassador Drive, Suite 312*

*Kansas City, MO 64163*

*Telephone Number: 913-342-2100*

*Email Address: mwertz@bnap.com*



Any complaint described that cannot be resolved by the program sponsor to the satisfaction of all parties may be submitted to the Registration Agency provided below in Section K.

**K. Registration Agency General Contact Information 29 CFR § 29.5(b)(17)**

The Registration Agency is the United States Department of Labor's Office of Apprenticeship. General inquiries, notifications and requests for technical assistance may be submitted to the Registration Agency using the contact information below *(To be completed by the Registration Agency)*:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

**L. Reciprocity of Apprenticeship Programs 29 CFR § 29.13(b)(7)**

States must accord reciprocal approval for Federal purposes to apprentices, apprenticeship programs and standards that are registered in other States by the Office of Apprenticeship or a Registration Agency if such reciprocity is requested by the apprenticeship program sponsor.

Program sponsors seeking reciprocal approval must meet the wage and hour provisions and apprentice ratio standards of the reciprocal State.

**SECTION II - APPENDICES AND ATTACHMENTS**

- ☒ **Appendix A** – *Work Process Schedule, Related Instruction Outline, Apprentice Wage Schedule, Ratio of Apprentices to Journeyworkers, Type of Occupation, Term of Apprenticeship, Selection Procedures, and Probationary Period*
- ☒ **Appendix B** – *ETA 671 - Apprenticeship Agreement and Application for Certification of Completion of Apprenticeship (To be completed after registration)*
- ☒ **Appendix C** – *Affirmative Action Plan (Required within two years of registration unless otherwise exempt per 29 CFR §30.4(d))*
- ☐ **Appendix D** – *Employer Acceptance Agreement (For programs with multiple-employers only)*





## SECTION II PART 1 – COLLECTIVE BARGAINING PROVISIONS

The employer or employer association must furnish to any union that is a collective bargaining agent of the employees to be trained a copy its application for registration and of these Standards, including all attachments.

The International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers, and Helpers and Employers in the Field Erection and Repair Industry and The Boilermakers National Joint Apprenticeship Board (Boilermakers) hereby adopt these standards of apprenticeship on this 17th day of September 2021

Lawrence J. McManamon  
*Signature of Management (designee)*

Michael P. Bray  
*Signature of Labor (designee)*

Lawrence J. McManamon  
*Printed Name*

Michael P. Bray  
*Printed Name*

\_\_\_\_\_  
*Signature of Management (designee)*

\_\_\_\_\_  
*Signature of Labor (designee)*

\_\_\_\_\_  
*Printed Name*

\_\_\_\_\_  
*Printed Name*



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### **SECTION III - VETERANS' EDUCATIONAL ASSISTANCE AS MANDATED BY PUBLIC LAW 116-134 (134 STAT. 276)**

Pursuant to section 2(b)(1) of the Support for Veterans in Effective Apprenticeships Act of 2019 (Pub. L. 116-134, 134 Stat. 276), by signing these program standards the program sponsor official whose name is subscribed below assures and acknowledges to the U.S. Department of Labor's Office of Apprenticeship the following regarding certain G.I. Bill and other VA-administered educational assistance referenced below (and described in greater detail at the VA's website at: <https://www.va.gov/education/eligibility>) for which current apprentices and/or apprenticeship program candidates may be eligible:

- (1) The program sponsor is aware of the availability of educational assistance for a veteran or other eligible individual under chapters 30 through 36 of title 38, United States Code, for use in connection with a registered apprenticeship program;
- (2) The program sponsor will make a good faith effort to obtain approval for educational assistance described in paragraph (1) above for, at a minimum, each program location that employs or recruits an veteran or other eligible individual for educational assistance under chapters 30 through 36 of title 38, United States Code; and
- (3) The program sponsor will not deny the application of a qualified candidate who is a veteran or other individual eligible for educational assistance described in paragraph (1) above for the purpose of avoiding making a good faith effort to obtain approval as described in paragraph (2) above.

**NOTE:** The aforementioned requirements of Public Law 116-134 shall apply to "any program applying to become a registered apprenticeship program on or after the date that is 180 days after the date of enactment of this Act" (i.e., September 22, 2020). Accordingly, apprenticeship programs that were registered by a Registration Agency before September 22, 2020, are not subject to these requirements.



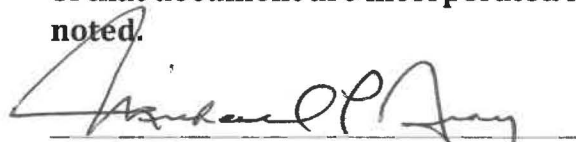


## SECTION IV – SIGNATURES

### OFFICIAL ADOPTION OF APPRENTICESHIP STANDARDS

The undersigned sponsor hereby subscribes to the provisions of the foregoing Apprenticeship Standards formulated and registered by The Boilermakers, on this 17th day of September 2021

The signatories acknowledge that they have read and understand the document titled “Requirements for Apprenticeship Sponsors Reference Guide” and that the provisions of that document are incorporated into this agreement by reference unless otherwise noted.

  
*Signature of Sponsor (designee)*

Michael Bray  
*Printed Name*

  
*Signature of Sponsor (designee)*

Lawrence McManamon Sr.  
*Printed Name*

## SECTION V - DISCLOSURE AGREEMENT (Optional)

I, \_\_\_\_\_ (*Sponsor Representative*), acting on behalf of The Boilermakers National Apprenticeship Program (Sponsor) authorize OA to share the Work Process Schedule and Related Instruction Outline in Appendix A with other potential apprenticeship sponsors.

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Printed Name*

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**Appendix A**

**(Sponsor(s) with multiple occupations must complete an Appendix A for each occupation)**

**WORK PROCESS SCHEDULE**

**AND**

**RELATED INSTRUCTION OUTLINE**

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## APPENDIX A

### WORK PROCESS SCHEDULE

#### BOILERMAKER

O\*NET-SOC CODE: 47-2011.00 RAPIDS CODE: 0040

This schedule is attached to and a part of these Standards for the above identified occupation.

#### 1. APPRENTICESHIP APPROACH

☒ Time-based ☐ Competency-based ☐ Hybrid

#### 2. TERM OF APPRENTICESHIP

The term of the apprenticeship is generally four (4) years with an OJL attainment of 6,000 hours, supplemented by the minimum required 576 hours of related instruction.

The employer shall be responsible for the training of the apprentice on-the-job. The supervisor of the apprentice(s) designated by the employer shall, with the advice and assistance of the AJAC, be responsible for the apprentice's work assignments' ensuring the apprentice is working under the supervision of a skilled journeyworker, evaluation of work performance, and completion and submittal of progress reports to the AJAC.

No apprentice will be allowed to work without direct journeyworker supervision.

#### 3. RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: 1 Apprentice to 3 Journeyworkers.

#### 4. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate per the collective bargaining agreement.

Refer to the local lodge or district wage sheet.



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## **5. PROBATIONARY PERIOD**

Every applicant selected for apprenticeship will serve a probationary period of *1,500 hours of on-the-job learning or one (1) year, whichever is shorter.*

## **6. SELECTION PROCEDURES**

Please see page 18.



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**WORK PROCESS SCHEDULE  
BOILERMAKER  
O\*NET-SOC CODE: 47.2011.00    RAPIDS CODE: 0400**

<b>Work Process Schedule</b>	<b>Approximate Hours</b>
I. Care and Maintenance of Tools and Equipment	100
A. Learning names of Tools and Equipment	
B. Learning the use of Tools and Equipment	
C. Care and Maintenance	
D. Handing out tools and inventory	
II. Rigging and Bull Gang	1,000
A. Unloading and Handling	
B. Use of Hoisting Equipment	
1. Come-along	
2. Chain falls	
3. Erection and dismantling derricks and cranes	
4. Working with derricks and cranes	
5. Use of signals and safety	
C. Use of Tackle	
1. Block and tackle	
2. Chokers, cables and slings	
3. Proper use of knots and splicing	
4. Proper use of clamps	
5. Safety	
D. Moving Pieces	
1. Rollers	
2. Levers	
3. Use of tackle, come-alongs and chain falls	
4. Safety	
III. General Erection	1,000
A. Steel Erection in our jurisdiction	
1. Designating location of members	
2. Raising in place	



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3. Use of spud-wrench, bull, and drift-pins, wedges, clips, and saddles
  4. Alignment
    - a. Use of level, plumb, tape and rule
  5. Connecting
    - b. Drilling, reaming, chipping, caulking and grinding
    - c. Bolting up
    - d. Welding (tack)
    - e. Riveting
  - B. Setting Drums and Headers
    1. Use of hoisting equipment and tackle
    2. Use of water level, plumb, and measuring devices
- IV. Tube Installations 400
- A. Entering
    1. Use of come-alongs and entering devices
    2. Lipping
  - B. Setting and Aligning
    1. Use of spacers
    2. Use of strong backs
  - C. Getting Proper Stock
    1. Signals (sound and light)
    2. Come-along
    3. Piece of stock
    4. Boiler code
  - D. Rolling
    1. Use of erectors' guides, or
    2. Proper selection of the following:
      - a. Expanders, rollers, pins, and mandrels
    3. Use of rolling machines
      - a. Pneumatic, electric and ratchet
      - b. Lubricants
    4. Use of gauges and signals
    5. Heavy tube sheets
    6. Entering and connecting baffles
    7. Testing
      - a. Visual
      - b. Water (Use of hydrostatic pump)
      - c. Air



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d. Use of gauges

V.	Use of Blueprint and Layout	400
A.	Use of prints to designate the following:	
1.	Locating parts and unloading	
2.	Moving parts to job location	
3.	Parts to be hoisted into position	
4.	Use of benchmark	
5.	Symbols	
A.	Layout	
1.	Use of precision measuring devices	
2.	Marketing for correction, re-cutting and fitting	
3.	Directing, cutting, and fitting of parts	
4.	Geometric measuring of parts, tube holes, etc.	
5.	Working with foreman	
VI.	Welding and Cutting	3,000
A.	Any and all forms of electric welding	
1.	Proper adjustment machines	
2.	Application and use of electrodes on all metals, ferrous and non-ferrous	
3.	Metal spraying and hard facing	
B.	Acetylene	
1.	Proper adjustment, gauges and torch	
2.	Selection of tips	
3.	Handling of torch and application	
a.	Ferrous and non-ferrous metals	
C.	Cutting	
D.	Acetylene	
E.	Arc (cutting and gouging)	
F.	Machine Methods	
G.	Adjusting and operating of equipment	
H.	Ferrous	
I.	Non-ferrous	
VII.	Nuclear Plant Construction-Reactors	100
A.	Theory-Types	
1.	Power	
2.	Propulsion	





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- 3. Heating
  - B. Research
  - C. Problems particular to Atomic Energy
    - 1. Those elements which would not be covered in other sections, i.e., radiation, radiation protection,
    - 2. Requirements for joints of high integrity

<b>TOTAL MINIMUM HOURS</b>	<b>6,000</b>
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**RELATED INSTRUCTION OUTLINE**  
**BOILERMAKER**  
**O\*NET-SOC CODE: 47-2011.00   RAPIDS CODE: 0040**

**YEAR 1 – 144 HOURS**

**Lesson 1-1: Boilermaker Safety**

OSHA Standards  
Personal Protective Equipment (PPE)  
Welding and Cutting Safety  
Confined Spaces  
Lockout/Tagout/Tryout  
Rigging Safety  
Scaffold Safety  
Ladder Safety  
Manual Lifting Safety  
Tool Safety  
Electrical Safety  
Fire Safety

**Lesson 1-2: Applied Math I**

The Language of Math  
Counting  
Place Value  
Addition and Subtraction  
Multiplication and Division  
Multiples and Factors  
Negative Factors  
Other Number Concepts  
Operating with Signed Numbers  
Axioms and Laws

**Lesson 1-3: Boilermaker Hand Tools**

Layout Tools  
Layout Work

**Lesson 1-4: Welding and Cutting: Basic**

Weldable Metals  
The Welding Process



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Oxyfuel Gas Welding  
ARC Welding  
Resistance Welding  
Thermit Welding  
Brazing and Braze Welding  
Soldering  
Electron Beam Welding  
Laser Beam Welding  
Cutting Processes  
Welded Joint Design  
Types of Welds  
Welding Position  
Welders and Welding Operators

**Lesson 1-5: ARC Welding: Equipment**

Power Sources  
ARC Welding Consumables

**Lesson 1-6: ARC Welding: Shielded Metal I**

SMAW Procedure  
Weld Joints

**Lesson 2-1: Applied Math II**

Fractions  
Types of Fractions  
Operations with Fractions  
Decimal Fractions  
Equivalent Decimals  
Operation with Decimals

**Lesson 2-2: Rigging: Basic Principles**

Basic Rigging Concepts  
Simple Tools

**Lesson 2-3: Boilermaker Power Tools**

Electric Powered Tools  
Air (Pneumatic Tools)  
Tube Tools and Their Functions



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## **Lesson 2-4: Construction Materials I**

Basic Construction Material

Metal Production

Metal Processing Methods

## **Lesson 2-5: ARC Welding: Shielded Metal II**

Heat Effects in Shielded Metal ARC Welding

Shielded Metal ARC Welding of Ferrous Metals

Shielded Metal ARC Welding of Nonferrous Metals

Troubleshooting when Welding with the SMAW Process

## **Lesson 2-6: Cutting: Oxyfuel I**

Equipment and Supplies

Manual Cutting Procedures

Cutting in Steel Plate

Machine Torch Cutting

## **YEAR 2 – 144 HOURS**

### **Lesson 3-1: Applied Math III**

Proportion

Percentage

Changing a Percent to a Decimal

The Three Percentage Cases

Fractural Percentages

Calculating with Approximate Numbers

Prime Numbers

Exponents and Radicals

### **Lesson 3-2: Rigging: Ropes**

Wire Rope

Fiber Rope

Chains

### **Lesson 3-3: Mechanical Drawing and Layout Tools**

Equipment

Basic Drafting Techniques

Layout Tools and Techniques



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### **Lesson 3-4: Mechanical Drawing Lines**

Types of Drawings

Types of Lines

Drawing Lines

Polygon Construction

Geometric Solids

### **Lesson 3-5: Welding Symbols**

Identifying Welding Symbols

Supplementary Welding Symbols

Non-Preferred Welding Symbols

Non-Destructive Testing Symbols

Designation of Welding Processes

### **Lesson 3-6: Cutting: Oxyfuel II**

Quality of Cutting

Miscellaneous Uses of the Oxyfuel Gas Flames

Oxyfuel Gas Welding

### **Lesson 4-1: Rigging: Cranes and Other Lifting Equipment**

Mobile Cranes

Tower Cranes

Monorails and Underhung Cranes

Derricks

Hoists

Overhead Cranes

Helicopter Cranes

### **Lesson 4-2: Mechanical Drawing: Field Sketching**

Sketching Materials

Sketching Guidelines

Beginning Line Exercises

Multi View Orthographic Sketches

Orthographic Projection for Sketching

Pictorial Sketching

Oblique Sketching

Perspective Sketching



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### **Lesson 4-3: Layout Procedures and Techniques**

Hammers, Sledges and Mauls  
Struck or Hammered Tools  
Cutting Hand Tools  
Taps and Dies  
Screwdrivers  
Holding Tools  
Miscellaneous Hand Tools

### **Lesson 4-4: Blueprint Reading: Structural**

Structural Steel  
Structural Drawings  
Drawing Structural Steel Shapes  
Connectors  
Connections

### **Lesson 4-5: Boiler Systems and Components I**

The Boiler  
Fire Tube Boilers  
Water Tube Boilers  
Water Tube Boiler Components  
Fuels and Fuel Burning Systems

### **Lesson 4-6: ARC Welding: Gas Metal ARC (MIG)**

Process Variations-Metal Transfer  
Gas Metal ARC Welding Equipment  
Consumable Used GMAW  
GMAW Process Variables  
Weld Bead Characteristics  
Welding Procedures  
Welding Conditions  
MIG Weld Defects: Causes and How to Correct Them  
MIG Spot Welding  
Vapor Shielded ARC Welding

## **YEAR 3 – 144 HOURS**

### **Lesson 5-1: Applied Math IV**

Basics of Algebra  
Multiplication



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Division

Basics of Plane Geometry

Basics of Solid Geometry

Triangulation (Trigonometry)

### **Lesson 5-2: Rigging: Tools**

Slings

Rigging Hardware

Reeving

Hoists and Winches

Skids, Rollers, Jacks and Cribbing

Ladders and Scaffolding

### **Lesson 5-3: Blueprint Reading: Boilermaker**

Erection Plans

How Blueprints are Made

### **Lesson 5-4: Tanks, Vessels, and Other Components**

Field Erected Storage Tanks

Basic Construction Techniques

Stacks and Liners

### **Lesson 5-5: Boiler Systems and Components II**

Boiler Circulation

Shop Assembled Boilers

Systems for the Pulp and Paper Industry

By Product Fueled Boilers

Waste Heat Boilers

### **Lesson 5-6: ARC Welding: Other Processes**

Submerged ARC Welding

Flux Cored ARC Welding

Plasma ARC Welding

### **Lesson 6-1: Construction Materials II**

Mechanical Properties

Chemical Properties of Metal

Physical Properties of Metals

Fiberglass Reinforced Plastics





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## **Lesson 6-2: Boiler: Installation**

- Field Inspection
- Shop Fabrication
- Site Preparation
- Erecting Structural Steel Supports
- Installing the Steam Drum
- Installing the Upper Headers
- Installing the Down Comers
- Installing Super-heater and Re-heater Modules
- Installing Water Walls
- Installing the Wind-Box
- Installing the Suction Manifold
- Installing the Pre-heater and Economizer
- Installing Ductwork
- Installing Lower Water-Walls
- Additional Construction
- Preparing the Boiler for Testing
- Cleanliness of Boiler Components
- Hydrostatic Testing
- Installing Insulation and Casing

## **Lesson 6-3: Metallurgy: Welding**

- Fundamentals of Metallurgy
- Structure Metal
- Metallurgy and Heat Training
- Metallurgy of the Welded Metal
- Welding Stresses, Warpage, Distorting, and Cracks

## **Lesson 6-4: Gas Tungsten Arc Welding (GTAW)**

- Principles of GTAW
- GTAW Power Source
- GTAW Equipment
- Electrodes
- Filler Metal
- Shielding Gas
- Personal Protective Equipment
- GTAW Techniques
- Weld Faults



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Safety

GTAW of Various Metals and Their Alloys

Variations of the GTAW Process

### **Lesson 6-5: Variables in Welding: Safety Recommendations and Precautions**

Distortion

Pre-Heating

Post Heat

Welding Safety Resources

OSHA Standards Related to Welding

### **Lesson 6-6: Cutting: ARC**

Air Carbon ARC Cutting (AAC)

Carbon ARC Cutting (CAC)

Oxygen ARC cutting (OAC)

Plasma ARC Cutting (PAC)

Metal ARC Cutting (MAC)

## **YEAR 4 - 144 HOURS**

### **Lesson 7-1: Applied Math V**

Measuring

Review of Decimals

Angular Measurements

Formulas and Equations in Review

Signs of Operations

Graphs

Math Aids

### **Lesson 7-2: Rigging: Equalizing and Distributing Loads - Lesson 7-2**

Distributing Weight to the Rigging

Basic Methods of Equalizing and Distributing Loads

Strength and Stability During Operation

### **Lesson 7-3: Mechanical Drawing and Dimensioning**

Theory of Dimensioning

The Language of Dimensioning

Units of Measurement Used in Dimensioning

Standard Dimensioning Practices

Dimensioning Application



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Dimensioning Special views  
Limit Dimensioning

#### **Lesson 7-4: Metallurgy: Weldability of Metals**

Classifying a Code Systems for Metals  
Identification of Metals  
Filler Materials  
Welding Characteristics of Metals and Alloys

#### **Lesson 7-5: Boiler: Repair and Maintenance**

Repairs  
Alterations  
Fiberglass Reinforced Plastics

#### **Lesson 7-6: Petro-Chemical & Steel Production**

Refineries  
Fractioning  
Types of Units  
Polymer Plastics  
Sulfur Refining  
Steel Production

#### **Lesson 8-1: Applied Metric Math**

Metrics (SI) in the United States  
Advantage of Metrics  
Metric (SI) Conversions  
Metrics (SI) in Shop or Field  
Metrics for the Boilermakers/Welder  
The Transition Period and the Future of Metrics

#### **Lesson 8-2: Environmental Controls**

International Standards  
Particulate Control  
Dry Electrostatic Precipitators – Components  
Dry Electrostatic Precipitators – Process and Applications  
Discharge Electrodes and Insulators  
Gas Flow Control Devices  
Rapping Systems  
Power Supplies and Controls



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Wet Electrostatic Precipitators  
Fabric Filters and Components  
Casing, Hoppers, and Dampers  
Wet Particulate Scrubbers  
Nitrogen Oxides – Formation, Control, Environmental Effects, and Reduction Process  
Combustion and Post-Combustion - Control and Reduction  
SCR Systems – Components and Process  
Sulfur Dioxide – Removal and Control  
Wet Scrubbers  
Absorber Design  
Spray Dryer Absorption

### **Lesson 8-3: Nuclear Power**

What is Nuclear Power?  
Principles of Nuclear Energy  
Nuclear Reactors  
Nuclear Spent Fuel  
Radiation  
Safety  
Working at a Nuclear Plant  
Personal Protective Equipment

### **Lesson 8-4: Welding: Special Applications and Techniques**

Stud Welding  
Tube and Pipe Welding  
Field Erection of Pressure Vessels and Boilers  
Field-Welded Storage Tanks  
One-Side Welding  
Underwater Welding and Cutting  
Weld Repair and Surfacing

### **Lesson 8-5: Welding: Design, Testing, and Inspection**

The Design of Welded Joints  
Testing

### **Lesson 8-6: Welding: Performance Qualifications**

Codes and Specifications

**TOTAL MINIMUM RI HOURS: 576**



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## **SELECTION PROCEDURES**

### **SECTION I – MINIMUM QUALIFICATIONS**

Applicants shall meet the following minimum qualifications:

A. **Age**

All applicants shall be at least eighteen (18) years of age. Applicants are required to submit reliable proof of age.

B. **Education**

Applicants shall be high school graduates or provide proof of equivalent educational attainment, such as successful completion of GED. Applicant must provide an official transcript(s) for high school and post high school education and training. All GED records must be submitted if applicable.

Applicants must submit a DD-214 to verify military training and/or experience if they are a veteran and wish to receive consideration for such training/experience.

C. **Physical**

Applicants will be physically capable of performing the essential functions of the apprenticeship program, with or without a reasonable accommodation, and without posing a direct threat to the health and safety of the individual or others.

Applicants will pass a MOST Drug and Alcohol screening on acceptance into the program within forty-eight (48) hours after signing the apprenticeship agreement and prior to being employed. Applicants shall be subject to subsequent tests for drug/alcohol use on an annual, random, reasonable suspicion, and per cause basis thereafter. The MOST Drug and Alcohol screening and cut-off levels are set forth on both the BNAP and MOST websites.

D. **Reliable Transportation**

Upon application to the Program, an applicant must demonstrate that he/she has access to reliable transportation. For purposes of this requirement, the term reliable transportation shall mean any form of transportation that permits the apprentice to attend work and any required classroom instruction held in the geographic jurisdiction of the program.

### **SECTION II – APPLICATION PROCEDURES**

- A. Applications shall be accepted year-round, but at least once a month at the Local level by the Local Apprentice Representative. All persons requesting an application shall have one made available upon signing the applicant log.



- B. All applications shall be identical in form and requirements. The application form shall be numbered in sequence corresponding with the number appearing on the applicant log so that all applications can be accounted for. Columns will be provided on the applicant log to show race/ethnic and gender identification and the progress by dates and final disposition of each application.
- C. Before completing the application, each applicant will be required to read the Apprenticeship Standards and will be informed of the basic qualifications and documents needed to complete the application.
- D. Receipt of the properly completed application form, along with required supporting documents, (proof of age, driver's license, birth certificate or other acceptable documentation; copy of high school diploma, GED Certificate or other acceptable documentation) if applicable, shall constitute the completed application.
- E. The Local Area Representative will review the applications received from applicants, checking for completeness.
- F. Completed applications, including the Applicant Log, will be forwarded to the Area Coordinator who will check all applications to ensure they meet the minimum age requirement. Applicants deficient in one or more qualifications or requirements or making false statements on their application will be notified in writing by the Area Coordinator of their disqualification. The applicant will also be notified of the appeals right available to them. No further processing of the application will be taken.

### **SECTION III – SELECTION PROCEDURES**

- A. The Area Joint Apprenticeship Committee will utilize referrals from the Helmets to Hardhats Program. Veterans who meet the requirements for entry into the Helmets to Hardhats Program will be eligible for referral to the Area Joint Apprenticeship Committee upon verification from the Helmets to Hardhats Program that the veteran(s) has a transferable skill in an apprenticeable occupation. Referrals from the Helmets to Hardhats Program will be done pursuant to the procedures established by the Helmets to Hardhats Program. Supervision of the selection process shall be done by the Helmets to Hardhats Program. Entry of veterans into the Program will be done without regard to race, color, religion, national origin, sex (including pregnancy and gender identity), sexual orientation, age, genetic information, or disability.



- B. After exhaustion of the pool of eligible applicants as outlined in subparagraph A above, the Area Joint Apprenticeship Committee will utilize Selection Method #2 (Random Selection from Pool of Eligible Applicants), until formal implementation of aptitude testing as described in Section I.B above as a minimum qualification effective June 1, 2013. This will include selection of individuals with welding qualifications in accordance with Exhibit "D-1" attached.
- C. The Area Coordinator will send the applicants a letter informing them of their placement on the Random Selection Applicant Roster.
- D. The Area Coordinator will provide the Local Committee with the final Applicant Roster based on the outcome of the random selection process.
- E. As openings for the registration of new apprentices occur, applicants will be notified of selection by telephone. It shall be the responsibility of the applicant to keep the Local Area Committee informed of their current mailing address and phone number. The Local Area Committee should inform the Area Coordinator of any changes received for applicant addresses/phone numbers.
- F. If the applicant cannot be reached by phone within two (2) days, a "Certified Letter, Return Receipt Requested," will be sent. If no response is received in ten (10) working days from the written notice of selection, the applicant's name will be removed from the list. Only one certified notice will be mailed.
- G. Qualified applicants remaining on a preceding eligibility pool will automatically be carried forward on the new eligibility pool and placed above those from the current pool of eligibles for a period of two (2) years unless the applicant has been removed from the list by their own written request or following failure to respond to an apprentice opening. Applicants who were not placed during the two (2) year period that were in the eligibility pool will be required to reapply.
- H. Alternative Selection Method – If the applicant receives a Letter of Intent-To-Hire (Letter of Sponsorship, Letter of Subscription) from a signatory contractor.
  - a) A letter of Intent-To-Hire can be used as part of an "Alternative selection method"
  - b) The letter must be written, signed, and dated by a signatory employer and submitted to the JATC.





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## **SECTION IV – DIRECT ENTRY**

- A. Area Joint Apprenticeship Committees who wish to invoke the direct entry provision may do so without regard to the existing selection procedure or minimum qualifications used for entry into the apprenticeship program. Individuals selected into the apprenticeship program via direct entry shall only include those individuals described below who have received training or employment in an occupation directly or indirectly related to the occupation(s) registered in these Standards. The Area Joint Apprenticeship Committees will award Credit for Previous Experience in accordance with Section XII of these Standards and will pay the apprentice(s) at the wage rate commensurate with their skill attainment. The Credit for Previous Experience shall be awarded without regard to race, color, religion, national origin, sex (including pregnancy and gender identity), sexual orientation, age, genetic information, or disability. The methods for direct entry shall include the following:
- B. Military Veterans who completed military technical training school and/or participated in a registered apprenticeship program or related occupation while in the military in the occupations registered in the boilermaker industry may be given direct entry into the apprenticeship program through the Helmets to Hardhats Program. Veterans who meet the requirements for entry into the Helmets to Hardhats Program will be eligible for referral to the Area Joint Apprenticeship Committee upon verification from the Helmets to Hardhats Program that the veteran(s) has a transferrable skill in an apprenticeable occupation. Referrals from the Helmets to Hardhats Program will be done pursuant to the procedures established by the Helmets to Hardhats Program. Supervision of the selection process shall be done by the Helmets to Hardhats Program. Entry of veterans into the Program will be done without regard to race, color, religion, national origin, sex (including pregnancy and gender identity), sexual orientation, age, genetic information, or disability.
- C. The JATC has designated applicants that receive a letter of sponsorship in Section III Alternate Selection Method – “Application Process” as Direct Entry. Entry into the Program will be done without regard to race, color, religion, national origin, sex (including pregnancy and gender identity), sexual orientation, age, genetic information, or disability.



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# Appendix C

## AFFIRMATIVE ACTION PLAN

### ADOPTED BY

***AL004610001-BOILERMAKERS S A J A C***

**AS REQUIRED UNDER 29 CODE OF FEDERAL REGULATIONS PART 30**

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**DEVELOPED IN COOPERATION WITH THE  
U. S. DEPARTMENT OF LABOR, OFFICE OF APPRENTICESHIP**

*Michael Nelson J*

*(Registration Agency Representative Signature)*

Michael Nelson J

*(Registration Agency Representative Typed/Printed Name)*

State Director

*(Title)*

3/14/2023

*(Date)*

*This Affirmative Action Plan template is provided by the U.S. Department of Labor, Office of Apprenticeship, for the convenience of apprenticeship program sponsors. Its use is recommended to promote understanding of, and compliance with, the Department's EEO in Apprenticeship rules at 29 CFR Part 30.*

*Please supply all requested information, unless otherwise directed by the form. If needed, use additional pages to complete responses.*



## AFFIRMATIVE ACTION PLAN

We, AL004610001-Boilermakers S A I A C, adopt this written Affirmative Action Plan (“written AAP” or “Plan”) in good faith to promote equality of opportunity in our registered apprenticeship program. This written AAP is a part of our apprenticeship Standards. We also incorporate by reference the Equal Opportunity Pledge contained in the Standards for this program.

This written AAP, which is based upon the minimum requirements for AAP contained in the equal opportunity in apprenticeship final regulation located at 29 CFR Part 30, is composed of nine key components. Each of these components requires us to examine different aspects of our apprentice workforce and document our review. At various stages of our review, we will analyze our utilization, recruitment activities, and selection, training, and assignment practices in order to ensure that all elements of our apprenticeship program are in accordance with equal employment opportunity requirements.

The key components of this AAP are as follows:

- Section I: Workforce Analysis for race, sex, and ethnicity (by occupation title and by major occupation group);
- Section II: Availability Analysis for race, sex, and ethnicity (by major occupation group);
- Section III: Utilization Analysis (comparing the workforce and availability analyses);
- Section IV: Utilization goals for race, sex, and ethnicity (if necessary);
- Section V: Utilization goals for individuals with disabilities;
- Section VI: Targeted outreach, recruitment, and retention activities (if necessary);
- Section VII: Annual review of personnel processes;
- Section VIII: Invitation to self-identify as an individual with a disability;
- Section IX: Official adoption of the written AAP.

### Abbreviations Key:

Please note that the following abbreviations denoting relevant racial and ethnic groups appear in the demographic charts contained in this written AAP (Appendix C):

*HISP* = Hispanic;  
*AA* = African American/Black;  
*AS* = Asian;  
*AIAN* = American Indian or Alaska Native;  
*NHPI* = Native Hawaiian or Other Pacific Islander.

**NOTE:** For detailed definitions of the above racial and ethnic groups, please see Attachment 1 of the Reference Guide.

**PLEASE NOTE:** To collect the demographic information on your apprentice workforce requested in Sections I through VIII below, you should consult the data supplied by your program’s apprentices in ETA Form 671. In addition, to ensure timely compliance with the AAP requirements contained in 29 CFR Part 30, you should keep a record of the date(s) on which you completed the analyses and activities described in Sections I through VIII below.



## SECTION I – WORKFORCE ANALYSIS FOR RACE, SEX, AND ETHNICITY (BY OCCUPATION TITLE AND BY MAJOR OCCUPATION GROUP)

The apprentice information needed to complete this workforce analysis section is available in the Registered Apprenticeship Partners Information Data System (RAPIDS) for all federally registered programs in the Office of Apprenticeship (OA) States, and for many state programs managed by State Apprenticeship Agencies (SAAs). Access to RAPIDS is available at: <https://dol.appiancloud.com/suite/sites/oa>. Sponsors that are not required to use RAPIDS to manage their apprentices are encouraged to work with the appropriate SAA to complete their workforce analysis.

The following terms are used in this section:

- An **Occupation Title** is a specific occupation that has been assigned a 6-digit “detailed occupation” code in the U.S. Bureau of Labor Statistics’ Standard Occupational Classification and Coding Structure (SOC), <https://www.bls.gov/soc/>, and a corresponding 8-digit code in the Occupational Information Network (O\*NET), <https://www.onetonline.org/>. Detailed occupations are defined so that each includes workers who perform similar job tasks based on work performed and, in some cases, on the skills, education and/or training needed to perform the work. For the purposes of completing the workforce analysis, occupation titles are defined by the 8-digit O\*NET code. Sponsors can locate the O\*NET code associated with their registered occupations from the program occupation tab in RAPIDS.
- A **Major Occupation Group** is the highest-level classification in the SOC, which combines related occupations into major occupation groups. These Major Occupation Groups are designated by the two-digit SOC code and the two-digit prefix of the O\*NET code. (*See Attachment 2, “Standard Occupational Classification and Coding Structure” in the accompanying Reference Guide for a complete list of the 23 major occupation groups and their two-digit SOC/O\*NET code designations*).

**Example:** A sponsor has an apprenticeship program that offers training in four different occupation titles: Roofer (SOC/O\*NET code: 47-2181.00), Electrician (SOC/O\*NET code: 47-2111.00), Tool and Die Maker (SOC/O\*NET Code: 51-4111.00), and Machinist (SOC/O\*NET code: 51-4041.00). In completing Tables 1, 2, and 3 of the workforce analysis below, the sponsor will enter identifying characteristics for their apprenticeship workforce by utilizing the Occupation Titles and the corresponding SOC/O\*NET codes for each of those titles.

In completing Tables 4, 5, and 6 of the analysis, however, the sponsor will classify their apprentice workforce by the two Major Occupation Groups that encompass these titles: Construction (2-digit SOC/O\*NET code: 47) and Manufacturing (2-digit SOC/O\*NET code: 51).



## INSTRUCTIONS FOR COMPLETING THE WORKFORCE ANALYSIS

In completing the tables (1 through 6) contained in this Section I, sponsors should utilize the demographic identification provided by apprentices in their Program Registration and Apprenticeship Agreements (see Form 671, Section II).<sup>1</sup> If you are a RAPIDS user, the workforce analysis is available as a report in the system. As noted above, sponsors that are not required to use RAPIDS to manage their apprentices are encouraged to work with the appropriate SAA to complete their workforce analysis.

### A. Workforce Analysis by Occupation Title for Sex, Ethnicity, and Race

**NOTE:** The workforce analyses by occupation title for sex, ethnicity, and race contained in Tables 1, 2, and 3 in this Section should initially be completed by the second anniversary of the apprenticeship program's registration with a Registration Agency. Subsequent workforce analyses for sex, ethnicity, and race should be undertaken at the time of each subsequent program review (or at least once every three years if a program review does not take place).

#### Instructions:

For each **Occupation Title** in a program, please indicate the total number of **responses** received from apprentices that self-identify for sex, ethnicity, and race in the following tables:

**TABLE 1 – Occupation Titles by Sex**

Number of Responses Selecting a Sex				
Occupation Title	8-Digit O*NET Code	Female	Male	Total
Boilermakers	47-2011.00	48	827	875

**TABLE 2 – Occupation Titles by Ethnicity**

Number of Responses Selecting an Ethnicity				
Occupation Title	8-Digit O*NET Code	HISP	NON-HISP	Total
Boilermakers	47-2011.00	57	823	880

<sup>1</sup> Self-identification is the most reliable method and preferred method for compiling information about a person's sex, race, and ethnicity. Sponsors are strongly encouraged to rely on employee self-identification to obtain this information. Please note that while visual observation is an acceptable method for identifying demographic data in the absence of self-identification data, it may not be reliable in every instance, and sponsors should not guess or assume the sex, race, or ethnicity of an apprentice or applicant for apprenticeship.



**TABLE 3 – Occupation Titles by Race**

**Note:** For Table 3 below, responding apprentices may elect to choose **one or more** of the specified races. If an apprentice has identified himself or herself as more than one race, count the apprentice in each of the racial categories that he or she has identified.

Number of Responses Selecting One (or More) Race							
Occupation Title	8-Digit O*NET Code	AS	AA	AIAN	NHPI	White	Total
Boilermakers	47-2011.00	2	167	14	4	647	828



## B. Workforce Analysis by Major Occupation Group for Sex, Ethnicity, and Race

**NOTE:** The workforce analysis by major occupation group for sex, ethnicity, and race contained in Tables 4, 5, and 6 in this Section should initially be completed by the second anniversary of the apprenticeship program's registration with a Registration Agency. Subsequent workforce analyses for sex, ethnicity, and race should be undertaken at the time of each subsequent program review (or at least once every three years if a program review does not take place).

### Instructions:

For each **Major Occupation Group** in a program, please complete the following sex, ethnicity, and race tables.

**TABLE 4 – Major Occupation Groups by Sex**

Number of Responses Selecting a Sex					
Major Occupation Group	2-Digit O*NET Code	Female	Male	Total	Female Percent of Total Responses
Construction and Extraction	47	48	827	875	5.5%

**TABLE 5 – Major Occupation Groups by Ethnicity**

Number of Responses Selecting an Ethnicity					
Major Occupation Group	2-Digit O*NET Code	HISP	NON- HISP	Total	HISP Percent of Total Responses
Construction and Extraction	47	57	823	880	6.5%





## TABLES 6.1 and 6.2 – Major Occupation Groups by Race

**Note:** For Table 6.1 below, responding apprentices may elect to choose **one or more** of the specified races. If an apprentice has identified himself or herself as more than one race, count the apprentice in each of the race categories that he or she has identified.

For Table 6.2 below, align the Major Occupation Groups and 2-Digit O\*NET Codes with the Major Occupation Groups and 2-Digit O\*NET Codes completed in Table 6.1, and compute the percentage of total responses within a racial category by comparing the number of responses selecting a particular race to the total number of responses completed in Table 6.1.

### 6.1 Number of Responses Selecting One (or More) Race

Major Occupation Group	2-Digit O*NET Code	AS	AA	AIAN	NHPI	White	Total
Construction and Extraction	47	2	167	14	4	647	828

### 6.2 Percent of Total Responses

Major Occupation Group	2-Digit O*NET Code	AS	AA	AIAN	NHPI
Construction and Extraction	47	0.2%	20.2%	1.7%	0.5%

## SECTION II – AVAILABILITY ANALYSIS FOR RACE, SEX, AND ETHNICITY (BY MAJOR OCCUPATION GROUP)

**PLEASE NOTE:** You should complete this section only in connection with a program review conducted by your Registration Agency. The Registration Agency will provide you with assistance in completing this section.

### A. Minimum Educational Attainment Levels Required for Program Enrollment

☒ High School graduate (including equivalency)



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## B. Designated Recruitment Area for Apprentices

☒ External recruitment area

The geographical area from which the sponsor usually seeks or reasonably could seek apprentices when recruiting from outside of its own current employees. An external recruitment area can be an area within a specific radius of a sponsor's location; a county or counties; or a state or states.

### **Brief Rationale for selecting this recruitment area:**

The Southeastern Area Joint Apprenticeship Committee serves the area of Alabama, Arkansas, Delaware\*, District of Columbia, Florida, Georgia, Iowa, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri\*\*, Nebraska, North Carolina, Ohio\*\*\*, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia\*\*\*\*.

\* excluding counties: New Castle.

\*\* including counties: Adair, Andrew, Atchison, Barry, Barton, Bates, Benton, Boone, Buchanan, Caldwell, Camden, Carroll, Cass, Cedar, Chariton, Christian, Clay, Clinton, Cooper, Dade, Dallas, Daviess, DeKalb, Douglas, Gentry, Greene, Grundy, Harrison, Henry, Hickory, Holt, Howard, Jackson, Jasper, Johnson, Laclede, Lafayette, Lawrence, Linn, Livingston, McDonald Macon, Mercer, Moniteau, Morgan, Newton, Nodaway, Ozark, Pettis, Platte, Poke, Putnam, Randolph, Ray, St. Clair, Saline, Schuyler, Stone, Sullivan, Taney, Vernon, Webster, Worth, and Wright.

\*\*\* Including counties: Adams, Athens, Belmont, Brown, Butler, Champaign, Clark, Clermont, Clinton, Fairfield, Franklin, Gallia, Greene, Guernsey, Hamilton, Highland, Hocking, Jackson, Lawrence, Licking, Madison, Meigs, Miami, Monroe, Montgomery, Morgan, Muskingum, Noble, Perry, Pickaway, Pike, Preble, Ross, Scioto, Vinton, Warran, and Washington.

\*\*\*\* Excluding counties: Brooke and Hancock.



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## C. Specifying the External Recruitment Area

**If you are utilizing an External Recruitment Area, please complete the following items:**

For each Major Occupation Group, we seek (or reasonably could seek) individuals who live in the following geographical zones or jurisdiction(s)

☒ A political jurisdiction

Selected County(ies):

Selected State(s):Alabama; Arkansas; Delaware; District of Columbia; Florida; Georgia; Iowa; Kansas; Kentucky; Louisiana; Maryland; Mississippi; Missouri; Nebraska; North Carolina; Ohio; Oklahoma; South Carolina; Texas; Virginia; West Virginia



### SECTION III: UTILIZATION ANALYSIS (COMPARING THE WORKFORCE AND AVAILABILITY ANALYSES)

**NOTE:** The utilization analysis contained in this Section should initially be completed, **with the assistance of the Registration Agency**, at the first program review after the second anniversary of registration. Subsequent utilization analyses should be undertaken at the time of each subsequent program review (or at least once every three years if a program review does not take place).

#### Determining Whether the Establishment of Utilization Goals Is Necessary: Methods for Utilization Analysis

##### A. Using the Demographic Analysis Tool

OA strongly encourages you to use the electronic **Demographic Analysis Tool (DAT)**<sup>2</sup> to conduct a utilization analysis because it provides a streamlined process for conducting the analysis, and also utilizes the most accurate, up-to-date national demographic data. **You are eligible to utilize the DAT if you satisfy ALL of the following criteria:**

- If, for a Major Occupation Group, you do not require applicants to meet credentials or skills beyond those specified in the minimum educational attainment checkboxes in Section II. A (*see Section II. A above*);
- If, for a Major Occupation Group, you recruit apprentices **solely** from an **external recruitment area** (i.e., you choose to establish a recruitment area that is based on a source derived from U.S. Census Bureau data) (*see Section II. B above*), AND
- You choose to utilize either the “80% method” or the “two standard deviations method” (which are described in Section III. B below) for conducting a utilization analysis.

**PLEASE NOTE:** If you do **not** meet each of the three criteria listed above, you should contact the Registration Agency for assistance in conducting your utilization analysis.

##### B. Applicable Methodology for Utilization Analysis Review

Select the method used to evaluate whether the utilization of women, Hispanics or Latinos, or a particular racial minority group in your workforce is significantly less than would be reasonably expected given the availability of such individuals for apprenticeship:

☒ 80% Method(Under the “80% method”

(Under the “80% method”, if utilization is less than 80% of availability, it is considered significantly less)

**Eligible sponsors may complete the DAT by accessing RAPIDS:**

<https://dol.appiancloud.com/suite/sites/oa>.

**After entering the data requested by the DAT, print a copy of the DAT Report, and attach it to this written AAP (Appendix C). Then proceed to Section IV below.**

<sup>2</sup> The DAT utilizes U.S. Census Bureau data derived from the [EEO Tabulation EEO-ALL07R-N1: Educational Attainment \(6\) by Younger Age Groups, Sex, and Race/Ethnicity \(Part I\) for Residence Geography, Total Population, Number](#)



## SECTION IV: UTILIZATION GOALS FOR RACE, SEX, AND ETHNICITY (IF NECESSARY)

**PLEASE NOTE:** *If the results of your utilization analysis (Section III above) did not identify any significant underutilization of apprentices by sex, race, or ethnicity in a Major Occupation Group, **you may skip this section and proceed to Section V.***

Completion of Table 7 below is only required in connection with a program review conducted by a Registration Agency. The Registration Agency will provide you with assistance in completing this section.

Based on the analyses summarized in the **DAT Report**, identify the sex/race/ethnic group(s) for which the proportion in your Major Occupation Group was significantly less than that group's availability in the relevant recruitment area(s). Record the results in **Table 7** below by copying the "yes" and "no" utilization outcomes from the **DAT Report** in the second column of the Table.

Next, enter the percentage utilization goal for any race, sex, or ethnicity group in which there was significant underutilization. The goal for any such group must at least equal the corresponding availability figure in the **DAT Report**, rounded to the nearest whole number. For any row in which the response in the second column is "no," leave the third column blank.

**TABLE 7 – Underutilization of Sex, Ethnicity, and Race**

### 47 - Construction and Extraction

Population Group	Significant Underutilization? (Yes/No) [from the <b>DAT Report</b> ]	Goal (%) [at least equal to the corresponding figures in the <b>DAT Report</b> ]
Women	Yes	44.54
Hisp	Yes	12.64
AA	No	18.79
AS	Yes	1.49
AIAN	No	0.55
NHPI	No	0.06

**PLEASE NOTE:** *The percentage goals listed in Table 7 above are not intended and will not be used by the program sponsor to discriminate against any qualified applicant or apprentice on the basis of race, color, religion, national origin, sex (including pregnancy, gender identity, and sexual orientation), sexual orientation, age (40 or older), genetic information, or disability. These goals do not supersede eligibility requirements for this apprenticeship program.*

*The program sponsor will not use these goals as rigid and inflexible quotas; as either a ceiling or a floor for the selection of members of a particular group(s) as apprentices; or as a justification to extend a preference to any individual, select an individual, or adversely affect an individual's status as an apprentice. Instead, the sponsor will use these goals as objectives or targets, applying every good faith effort to make all aspects of the entire affirmative action program work and to attain the goals.*



## SECTION V – UTILIZATION GOALS FOR INDIVIDUALS WITH DISABILITIES

**NOTE:** The workforce analysis for individuals with disabilities (IWDs) in this Section should initially be completed by the second anniversary of the apprenticeship program’s registration with a Registration Agency. Subsequent workforce analyses for individuals with disabilities should be undertaken at the time of each subsequent program review (or at least once every three years if a program review does not take place).

### A. Workforce Analysis for Individuals with Disabilities by Occupation Title

**Table 8** below shows, for each **Occupation Title** represented in the program, the numbers of apprentices in the workforce whose responses to the question “do you have a disability?” on their most recent Voluntary Disability Disclosure Form was “yes;” “no;” or “I do not wish to answer” (or who did not return the form).

**TABLE 8 - Disability Status by Occupation Title**

Number of Individuals Responding to the Question: “Do you have a disability?”					
Occupation Title	8-Digit O*NET Code	Yes	No	Did not answer or return form	Total Number of Individuals Responding Either ‘Yes’ or ‘No’
Boilermakers	47-2011.00	1	754	130	755

### B. Workforce Analysis for Individuals with Disabilities by Major Occupation Group

**Table 9** below shows, for each **Major Occupation Group** represented in the program, the numbers and percentages of apprentices whose responses to the question “do you have a disability?” on their most recent Voluntary Disability Disclosure Form was “yes;” “no;” or “I do not wish to answer” (or who did not return the form).

**TABLE 9 – Disability Status by Major Occupation Group**

Number of Individuals Responding to the Question: “Do you have a disability?”						
Major Occupation Group	2-Digit O*NET Code	Yes	No	Did not answer or return form	Total Number of Individuals Responding ‘Yes’ or ‘No’	Proportion of persons responding ‘yes’ to the total number of individuals that responded either ‘yes’ or ‘no’ (expressed as a percentage)
Construction and Extraction	47	1	754	130	755	85.3%



### C. Identification of Potential Impediments for Individuals with Disabilities (IWDs)

The Major Occupation Group(s) in our program in **which the percentage of IWDs was less than seven percent** is/are listed in the **first column of Table 10 below**. For these groups, we reviewed our program to identify any impediments to equal opportunity for IWDs, with the results shown in the second column.

**TABLE 10 – Impediments to EEO for IWDs**

Major Occupation Groups in which the percentage of IWDs was less than 7%	Impediments to EEO for IWDs
Construction and Extraction	1. Physically inaccessible facilities
	2.
	3.

### SECTION VI – TARGETED OUTREACH, RECRUITMENT, AND RETENTION ACTIVITIES (IF NECESSARY)

**PLEASE NOTE:** Completion of this section is **mandatory** if you were required to adopt race, sex, or ethnicity goals (under Section IV of this written AAP) or if you found impediments to equal employment opportunity for IWDs (under Section V of this written AAP). Otherwise, completion of this section is purely optional.

In the coming year, we will undertake the outreach, recruitment, and retention activities listed below. These activities are targeted to the race/sex/ethnicity group(s) for which we adopted goals (as shown in **Section IV**) and/or to IWDs (if we found impediments to equal employment opportunity for such individuals, as shown in **Section V**).

1. We will disseminate information to organizations serving each underutilized group regarding the nature of our apprenticeship program, requirements for selection for apprenticeship, availability of apprenticeship opportunities, and our equal opportunity pledge. The Universal Outreach Tool (UOT) can help connect sponsors with local organizations who may be able to assist sponsors in meeting their outreach, recruitment, and retention goals; the UOT may be accessed at: <https://apprenticeshipusa.secure.force.com/eeoresourcetool>.) These organizations and the group(s) that each serve are listed in **Table 11**:

**TABLE 11 – Organizations Serving Underutilized Populations**

Major Occupation Group	Underutilized Population (i.e., Women, AA, HISP, AS, AIAN, NHPI, IWDs)	Organization(s) serving population to which information will be disseminated

2. We will advertise all openings for apprenticeship opportunities by publishing advertisements in the following media that have wide circulation in our relevant recruitment areas:

Facebook

3. We will cooperate with the following local school boards and vocational education systems to develop and/or establish relationships with pre-apprenticeship programs targeting students from each underutilized group



to prepare them to meet the standards and criteria required to qualify for entry into our apprenticeship programs:

4. We will establish linkage agreements or partnerships with the following pre-apprenticeship programs, community-based organizations, advocacy organizations, or other appropriate organizations, in recruiting qualified individuals for apprenticeship:
5. After every selection cycle for registering apprentices, we will evaluate and document the overall effectiveness of the above-targeted outreach and recruitment activities and refine them as needed.
6. We **will** undertake the following optional activities:

## SECTION VII – ANNUAL REVIEW OF PERSONNEL PRACTICES

**PLEASE NOTE:** You should initially complete this section by the second anniversary of your program's registration with a Registration Agency, and again on an annual basis.

We conduct a thorough, systematic, and comprehensive review at the program, industry and occupation level of our personnel processes related to the administration of the apprenticeship program annually. Such an annual review ensures that the apprenticeship program is operating free from discrimination based on race, color, religion, national origin, sex (including pregnancy, gender identity, and sexual orientation), sexual orientation, age (40 or older), genetic information, and disability.

Our reviews have included (but may not be limited to): the qualifications for apprenticeship, application and selection procedures, wages, outreach and recruitment activities, advancement opportunities, promotions, work assignments, job performance, rotations among all work processes of the occupation, disciplinary actions, handling of requests for reasonable accommodations, and the program's accessibility to individuals with disabilities (including the use of information and communication technology).

As a result of our most recent annual review, which was conducted on 2/27/1997, we made or will make the modifications to the program listed in **Table 12** below.



**TABLE 12 – Modifications of Personnel Practices**

Modification of Personnel Practices	Date Made or To Be Made
Taking appropriate disciplinary actions (up to and including termination) against staff or apprentices who engage in unlawful harassment or otherwise fail to provide equal employment opportunity	02-22-2023

**SECTION VIII – INVITATION TO SELF-IDENTIFY AS AN INDIVIDUAL WITH A DISABILITY**

**PLEASE NOTE:** You should initially complete this section by the second anniversary of your program’s registration with a Registration Agency, and again on each occasion that you update your written AAP.

On 2/16/2023, we began inviting all applicants for our program, at the time that they apply or are considered for apprenticeship, to inform us whether they believe that they are IWDs.

We invited our then-current apprentices to self-identify on 2/16/2023.

Since then, we have continued to invite all applicants to self-identify when they apply, and all accepted applicants to self-identify after acceptance into the program but before they begin their apprenticeships.

Every year, we have reminded all current apprentices that they may update their Voluntary Disability Disclosure Form. We sent our most recent reminder on 2/22/2023.

We use the Voluntary Disability Disclosure Form for these self-identification invitations, and keep it separate from the application and the apprentice’s program files.

We keep the Voluntary Disability Disclosure Form separate from the application and the apprentice’s program files.



## SECTION IX – OFFICIAL ADOPTION OF THE WRITTEN AFFIRMATIVE ACTION PLAN

### 1. Adoption by the Sponsor

AL004610001-Boilermakers S A J A C adopts this written Affirmative Action Plan on this 9th day of February, 2023.

Signature of Sponsor's Representative

Eric Olson

Typed/Printed Name

2/23/2023

Date

Signature of Sponsor's Representative

\_\_\_\_\_

Typed/Printed Name

\_\_\_\_\_

Date

Signature of Sponsor's Representative

\_\_\_\_\_

Typed/Printed Name

\_\_\_\_\_

Date

Signature of Sponsor's Representative

\_\_\_\_\_

Typed/Printed Name

\_\_\_\_\_

Date

### 2. Adoption by Labor and Management Representatives of the Sponsor

AL004610001-Boilermakers S A J A C adopts this written Affirmative Action Plan on this 9th day of February, 2023.

Ronnie Traxler

Signature of Management Representative

Ronnie Traxler

Typed/Printed Name

2/25/2023

Date

Timothy Simmons

Signature of Labor Representative

Timothy Simmons

Typed/Printed Name

3/7/2023

Date