STANDARDS OF APPRENTICESHIP
adopted by

FLUOR HANFORD INDUSTRIAL MAINTENANCE APPRENTICESHIP COMMITTEE - REVISED VERSION

(sponsor)

Skilled Occupational Objective(s):	DOT	DOT
AUTOMOTIVE MECHANIC	620.261-010	7200 HOURS
BOILERMAKER	805.261-014	7200 HOURS
EQUIPMENT OPERATOR (OPERATING ENGINEER)	859.683-010	7200 HOURS
HEAVY DUTY EQUIPMENT REPAIRMAN	620.281-050	8550 HOURS
INDUSTRIAL CARPENTER	860.281-010	7200 HOURS
INDUSTRIAL LOCKSMITH/SAFEMASTER	709.281-010	6000 HOURS
INDUSTRIAL MAINTENANCE ELECTRICIAN	829.261-018	10,000 HOURS
INSTRUMENT TECHNICIAN	710.281-026	8000 HOURS
LINEMAN	821.261-014	6000 HOURS
MACHINIST	600.280-042	7200 HOURS
MAINTENANCE ASBESTOS WORKER/INSULATOR	863.381-014	7200 HOURS
MILLWRIGHT	638.281-018	7200 HOURS
PAINTER/DECORATOR	840.381-010	7200 HOURS
PLUMBER STEAMFITTER	862.281-022	10,000 HOURS
SHEET METAL	637.664-010	9000 HOURS
SIGN AND PICTORIAL PAINTER	970.381-026	6000 HOURS
SUBSTATION MAINTENANCE ELECTRICIAN	820.261-018	8000 HOURS

APPROVED BY
Washington State Apprenticeship and Training Council
REGISTERED WITH
Apprenticeship Section of Specialty Compliance Services Division
Washington State Department Labor and Industries
Post Office Box 44530
Olympia, Washington 98504-4530

APPROVAL:

OCTOBER 16, 1970	OCTOBER 18, 2002
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Standards Amended (review)	Standards Amended (administrative)

By: LAFRANK NEWELL
Chair of Council

By: PATRICK WOODS
Secretary of Council

FLUOR HANFORD INDUSTRIAL MAINTENANCE APPRENTICESHIP COMMITTEE - REVISED VERSION

The Washington State Apprenticeship and Training Council (WSATC) has the authority to develop, administer, and enforce apprenticeship program standards (Standards) for the operation and success of an apprenticeship and training program in the State of Washington. Apprenticeship programs and committees function, administer, or relinquish authority only with the consent of the WSATC and only apprentices registered with the supervisor or recognized under the terms and conditions of a reciprocal agreement will be recognized by the WSATC. Parties signatory to these Standards declare their purpose and policy is to establish and sponsor an organized system of registered apprenticeship training and education.

These Standards are in conformity and are to be used in conjunction with the Apprenticeship Rules, Chapter 296-05 WAC (Washington Administrative Code); Apprenticeship Act, Chapter 49.04 RCW (Revised Code of Washington); The National Apprenticeship Act, 29 U.S.C. (United States Code) 50; Apprenticeship Programs, Title 29 Part 29 CFR (Code of Federal Regulations); and Equal Employment Opportunity in Apprenticeship and Training, Title 29 Part 30 CFR which govern employment and training in apprenticeable occupations. They are part of this apprenticeship agreement and bind all signers to compliance with all provisions of registered apprenticeship. Additional information may need to be maintained by the program that is supplemental to these apprenticeship standards. This information is for purposes of ensuring compliance with decisions of the WSATC and the apprenticeship laws identified above.

If approved by the council, such amendment/s and such changes as adopted by the council shall be binding to all parties. Sponsors shall notify apprentices of changes as they are adopted by the council. If and when any part of these Standards becomes illegal, as pertains to federal and/or state law, that part and that part alone will become inoperative and null and void, and the Department of Labor and Industries (L&I) may adopt language that will conform to applicable law. The remainder of the Standards will remain in full force and effect.

See WAC 296-05-003 for the definitions necessary for use with these Standards.

These Standards of Apprenticeship pertain to the training of apprentices covered by the Fluor Hanford Inc./HAMTC Agreement in the following crafts: Industrial locksmith/safemaster, lineman, boilermaker, equipment operator (operating engineer), industrial carpenter, machinists, millwright, plumber-steamfitter, industrial maintenance electrician, instrument technician, sheet metal, sub-station maintenance electrician, automotive mechanic and heavy duty equipment repairman, painter/decorator and maintenance asbestos worker/insulator.

Definitions as used throughout these Standards of Apprenticeship

A. Fluor Hanford Inc., hereinafter is called FHI in these Standards.

B. "Employer" shall mean Fluor Hanford Inc..

C. "Plant" shall mean Fluor Hanford Inc..

D. The "Union" shall mean the Hanford Atomic Metal Trades Council.

E. "Apprenticeable Crafts" shall mean the following industrial crafts: industrial locksmith/safemaster, lineman, boilermaker, equipment operator (operating engineer), industrial carpenter, machinists, millwright, plumber-steamfitter, industrial maintenance electrician, automotive mechanic, heavy duty equipment repairman, painter/decorator and maintenance asbestos worker/insulator and other industrial crafts as may be agreed on by FHI and the union to meet the future needs of the FHI.

F. "Employing Manager" shall mean a designated representative of Fluor Hanford Inc.

G. "Apprenticeship Coordinator" shall mean the person employed by FHI to administer the apprenticeship program in accordance with these Standards.

I. GEOGRAPHIC AREA COVERED:

The sponsor has no authority to conduct training outside of the geographical area covered by these Standards. The sponsor may enter into an agreement (portability agreements – see WAC 296-05-303(3)) with other apprenticeship committees for the use of apprentices by training agents that are working outside their approved geographic area. Also, if a reciprocity agreement (see WAC 296-05-327) is in place, the out-of-state sponsor may use their registered apprentices. The sponsor will ensure compliance with the provisions of any agreement recognized by the WSATC.

The plant covered by these standards shall apply to the area of operation covered by the contract with DOE and Fluor Hanford Inc. DOE/FHI Prime Contract Number DE-AC06-96RL13200.

II. MINIMUM QUALIFICATIONS:

Minimum qualifications must be clearly stated and applied in a nondiscriminatory manner (see WAC 296-05-316).

Age: **Applicants must be at least eighteen (18) years of age.**

Education: **Applicants must have received either a high school diploma, a vocational school diploma equivalent to a high school diploma, or other equivalent of a high school education. Exceptions may be made by the Apprenticeship Committee for those with previous experience in the trade.**

Physical: **All newly hired individuals must meet the physical and background reference check requirements as established by FHI.**

Testing: **None**

Other: **None**

III. CONDUCT OF PROGRAM UNDER WASHINGTON EQUAL EMPLOYMENT OPPORTUNITY PLAN:

Sponsors with five (5) or more apprentices must adopt an Equal Employment Opportunity (EEO) Plan and Selection Procedures (see Part D of Chapter 296-05 WAC and 29 CFR Part 30).

The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, sex, color, religion, national origin, age, disability or as otherwise specified by law. The sponsor shall take positive action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required by the rules of the Washington State Apprenticeship and Training Council and Title 29, Part 30 of the Code of Federal Regulations. (WAC 296-05-316(3))

A. Selection Procedures:

1. **However, due to the changing mission at Hanford from defense to environmental restoration, Apprenticeship positions may be created to provide retraining opportunities for employees whose jobs have been eliminated as a result of the change in the new mission. In these cases, employees who meet the minimum qualifications for participation in the Apprenticeship program may be considered for selection prior to announcing proposed Apprenticeship openings to the general workforce. In the event that qualified applicants cannot be identified from within W.H.C. applications for admission to the program shall be made to the FHI Employment Office. Information regarding apprenticeship openings shall be furnished by Fluor Hanford to the local office of the Washington State Employment Service and to the local vocational schools. Such information will also be posted at the Fluor Hanford Industrial Relations Employment Office. The date of application of responding candidates and the selection process will be recorded and such records will be retained in the J.A.T.C. Coordinators office for a period of five (5) years.**

2. **All applicants who meet the minimum qualification set forth in Section 2, Minimum Qualifications, will be evaluated by the Apprenticeship Sub-Committee regarding their educational background and work experience.**

3. **Interview:**

Qualifying applicants will be scored and ranked using an interview system. Rankings shall be determined based on education, past training and experience and response to interviewing questions. Interviewer notes will be maintained in the applicant file for a minimum of two years.

a. Non-qualified applicants will be notified in writing

4. Final Selection of Apprentices:
The FHI employing manager will make the final selection from the list described in Section 3.A.3 above and based on staffing requirements and recommendation of the Apprenticeship Committee.

5. After considering the recommendation of the Apprenticeship Committee and other factors, the employer shall determine the number of apprentices to be selected for the program. Information regarding apprenticeship openings shall be furnished by Fluor Hanford to the local office of the Washington State Employment Service and to the local vocational schools.

B. Equal Employment Opportunity Plan:

1. Cooperate with schools, community colleges, and vocational schools to prepare students for entrance into apprenticeship.

2. Grant credit for previous trade experience or trade-related courses for all applicants equally.

3. Engage in any other such action as stated above to insure that recruitment, selection, employment and training of apprentices during apprenticeship shall be without discrimination because of race, color, religion, national origin, sex, disability or veteran status.

4. Disseminate information, within shops or concerns concerning equal opportunity policies of the program's sponsor(s).

Discrimination Complaints.
Any apprentice or applicant for apprenticeship who believes they have been discriminated against may file a complaint (WAC 296-05, Part D).

IV. TERM of APPRENTICESHIP:

The minimum term of apprenticeship must not be less than 2000 hours or 12 months of work experience in each occupation identified in these Standards as apprenticeable. The term of apprenticeship must be stated in hours or months of employment.

FLUOR HANFORD INDUSTRIAL MAINTENANCE APPRENTICESHIP COMMITTEE - REVISED VERSION

Crafts	Minimum Employment Months	Approximate Hours
Automotive Mechanic, Boilermaker, Equipment Operator (Operating Engineer), Industrial Carpenter, Machinist, Maintenance Asbestos Worker/Insulator, Millwright, Painter/Decorator, Plumber-Steamfitter	**48**	**7200**
Heavy Duty Equipment Repairman	**57**	**8550**
Industrial Locksmith/Safemasters	**36**	**6000**
Industrial Maintenance Electrician	**60**	**10,000**
Instrument Technician	**48**	**8000**
Lineman	**36**	**6000**
Plumber-Steamfitter	**60**	**10,000**
Sheet Metal	**58**	**9000**
Sign Painter and Pictorial Painter	**36**	**6000**
Substation Maintenance Electrician	**48**	**8000**

Hours of work credited toward completion of apprenticeship shall be exclusive of vacation, holidays, time off from work, and time spent in supplemental classroom instruction and home study.

V. INITIAL PROBATIONARY PERIOD:

All apprentices are subject to an initial probationary period, stated in hours or months of employment for which they receive full credit toward completion of apprenticeship. Advance credit/standing will not reduce the initial probationary period. The initial probationary period:

- Is the period following the apprentice's acceptance into the program and during which the apprentice's appeal rights are impaired. The initial probation must not exceed twenty percent (20%) of the term of apprenticeship unless an exemption by the WSATC has been granted for longer probationary periods as specified by Civil Service or law.

- Is the period that the WSATC or the supervisor of apprenticeship may terminate an apprenticeship agreement at the written request by any affected party. The sponsor or the apprentice of the apprenticeship agreement may terminate the agreement without a hearing or stated cause. An appeal process is available to apprentices who have completed the initial probationary period.

The probationary period for all crafts shall be the first 1000 hours of employment.

VI. RATIO OF APPRENTICES TO JOURNEY LEVEL WORKERS:

Supervision is the necessary education, assistance, and control provided by a journey-level employee that is on the same job site at least seventy-five percent of each working day, unless otherwise approved by the WSATC. The sponsor will assure that apprentices are under the supervision of competent and qualified journey-level workers on the job who are responsible for the work being performed, to ensure safety and training in all phases of the work. Apprentices will work the same hours as journey-level workers, EXCEPT where such hours may interfere with related/supplemental instruction. (see WAC 296-05-316(5))

The ratio of apprentices to journey-level worker may vary from craft to craft in accordance with the judgment of the Apprenticeship Committee. However, it is understood that in no event shall an established ratio call for less than five (5) journey-level workersfor each apprentice in a particular craft unless fewer than five (5) journey-level workers exist, in which case the ratio may be reduced to provide for at least one apprentice for one (1) to four (4) journey-level workers.

It is recognized that there may be temporary day-to-day variations in an established ratio and that it may not be maintained during a period of staffing, a new or expanded facility.

VII. APPRENTICE WAGES and WAGE PROGRESSION:

The apprentice will be paid a progressively increasing schedule of wages based on specified percentages of journey-level wage consistent with skills acquired. These may be indicated in hours or monthly periods set by the sponsor. The entry wage will not be less than the minimum wage prescribed by the Fair Labor Standards Act, where applicable, unless a higher wage is required by other applicable federal law, state law, respective regulations, or by collective bargaining agreement.

The sponsor may accelerate, by an evaluation process, the advancement of apprentices who demonstrate abilities and mastery of the occupation to the level for which they are qualified. When the apprentice is granted advanced standing the sponsor must notify the employer/training agent of the appropriate wage per the wage progression schedule specified in these Standards.

Industrial Locksmith/Safemaster, Lineman, Sign and Pictorial Painter

Step	Number of hours/months	Percentage of journey-level rate
1	**0000 - 1038 hours**	**60%**
2	**1039 - 2076 hours**	**67%**
3	**2077 - 3114 hours**	**73%**
4	**3115 - 4152 hours**	**80%**

5	**4153 - 5190 hours**	**86%**
6	**5191 - 6000 hours**	**93%**

Automotive Mechanic, Boilermaker, Equipment Operator (Operating Engineer), Industrial Carpenter, Machinist, Maintenance Asbestos Worker/Insulator, Millwright, Painter/Decorator,

Step	Number of hours/months	Percentage of journey-level rate
1	**0000 - 1038 hours**	**60%**
2	**1039 - 2076 hours**	**65%**
3	**2077 - 3114 hours**	**70%**
4	**3115 - 4152 hours**	**75%**
5	**4153 - 5190 hours**	**80%**
6	**5191 - 6228 hours**	**85%**
7	**6229 - 7200 hours**	**90%**

Instrument Technician, Substation Maintenance Electrician

Step	Number of hours/months	Percentage of journey-level rate
1	**0000 - 1038 hours**	**60%**
2	**1039 - 2076 hours**	**65%**
3	**2077 - 3114 hours**	**70%**
4	**3115 - 4152 hours**	**75%**
5	**4153 - 5190 hours**	**80%**
6	**5191 - 6228 hours**	**85%**
7	**6229 - 7266 hours**	**90%**
8	**7267 - 8000 hours**	**95%**

Heavy Duty Equipment Repairman

Step	Number of hours/months	Percentage of journey-level rate
1	**0000 - 1038 hours**	**60%**
2	**1039 - 2076 hours**	**65%**
3	**2077 - 3114 hours**	**70%**
4	**3115 - 4152 hours**	**75%**
5	**4153 - 5190 hours**	**80%**
6	**5191 - 6228 hours**	**85%**
7	**6229 - 7266 hours**	**90%**
8	**7267 - 8550 hours**	**95%**

Sheetmetal

Step	Number of hours/months	Percentage of journey-level rate
1	**0000 - 1038 hours**	**60%**
2	**1039 - 2076 hours**	**65%**
3	**2077 - 3114 hours**	**70%**
4	**3115 - 4152 hours**	**75%**
5	**4153 - 5190 hours**	**80%**
6	**5191 - 6228 hours**	**85%**

7	**6229 - 7266 hours**	**90%**
8	**7267 - 9000 hours**	**95%**

Industrial Maintenance Electrician, Plumber-Steamfitter.

Step	Number of hours/months	Percentage of journey-level rate
1	**0000 - 1038 hours**	**50%**
2	**1039 - 2076 hours**	**55%**
3	**2077 - 3114 hours**	**60%**
4	**3115 - 4125 hours**	**65%**
5	**4126 - 5190 hours**	**70%**
6	**5191 - 6228 hours**	**75%**
7	**6229 - 7266 hours**	**80%**
8	**7267 - 8304 hours**	**85%**
9	**8305 - 9342 hours**	**90%**
10	**9343 - 10000 hours**	**95%**

Apprentices progress to the journey-level worker job rates as follows:

Time	**Craft**
36 months	**Industrial Locksmith/Safemasters, Lineman, Sign Painter and Pictorial Painter**
48 months	**Automotive Mechanic, Boilermaker, Equipment Operator (Operating Engineer), Industrial Carpenter, Machinist, Maintenance Asbestos Worker/Insulator, Millwright, Painter/Decorator, Plumber-Steamfitter, Instrument Technician, Substation Maintenance Electrician**
57 months	**Heavy Duty Equipment Repairman**
58 months	**Sheet Metal**
60 months	**Industrial Maintenance Electrician, Plumber-Steamfitter**

VIII. WORK PROCESSES:

The apprentice shall receive on the job instruction and experience as is necessary to become a qualified journey-level worker versed in the theory and practice of the occupation covered by these Standards. The following is a condensed schedule of work experience, which every apprentice shall follow as closely as conditions will permit.

Employers/training agents shall only use registered apprentices to perform the work processes as stated in this section. (WAC 296-05-003 - Definitions)

A. Automotive Mechanic:

Job or Operation	Equipment	Time/Hours
Familiarization - new vehicle service, installation of accessories, body service, shop routine.	**As required**	**200**
Brakes - adjusting, relining, repair hydraulic systems, power brakes, air and vacuum brakes, also include brake drum reconditioning and brake shoe grinding.	**As required**	**500**
Chassis - frame, steering units, front systems, shock absorbers, springs, shackles.	**As required**	**350**
Clutch and transmission - clutches, transmissions, standards and automatic, overdrives and shift controls, power take-off.	**As required**	**1250**
Rear axle assembly - differentials (single as required and 2-speed) universal joint, drive lines, rear axle.	**As required**	**500**
Power plants - valves, timing gears and chains, piston and ring assembly, bearing and crankshaft, cylinder reconditioning, cooling system.	**As required**	**1500**

Includes gas and diesel engines.		
Electrical system- wiring and lighting systems, generator, alternator, regulator, motor, starting systems, electrical accessories (i.e., wind-shield wipers, etc.) instruments and gauges, ignition systems, batteries and transmission controls.	**As required**	**1000**
Motor analyzing- carburetors, fuel systems, distributions, etc., trouble shooting, fuel injectors, tune-up. Includes all forms of supercharging.	**As required**	**1150**
Miscellaneous - exhaust systems, air-conditioning, welding, auxiliaries, machine shop practices.	**As required**	**750**
	TOTAL HOURS:	**7200**

B. Boilermaker:

Job or Operation	Equipment	Time/Hours
Hand and power tool familiarization, any activity designed to familiarize the apprentice with nomenclature care, use, selection and safety consideration of correct tools of the craft.	Hand tools (as required) Circle cutters, power shear, power brake, power punch, angle iron notcher, power rolls, press, belt sander, drill motor and press, grinders, air power rolls, band saw, power hack saw, bar bender, plasma arc.	800
Material and equipment familiarization, any activity designed to familiarize the apprentice with correct nomenclature and identification of material used in the craft.	Material (as required) Equipment (as required)	300
Shop systems familiarization, consisting of traveler, work orders, schedules, instructions, QA practices, general blueprint and applicable code orientation.	Equipment (as required)	200
General boilermaker work of fabrication, assembly and installation including layout, a flat cylindrical, conical and irregular curved surfaces and use of template, material burning welding practices and rigging or hoist procedures.	Equipment (as required)	1000
Fabrication, assembly and installation of vessel, tube buncles, condensers, and etc., including close tolerance work, nozzle and flange locating jig and fixture usage and testing aspects.	Equipment (as required)	2500
Fabrication, assembly, repair,	Equipment (as required)	800

and installation of glove boxes, hood panels, burial boxes and capsules, containers and miscellaneous support.		
Maintenance-maintaining and repairing of fired and unfired pressure vessels, steam generators, heat exchangers, surge tanks, air receivers, pressurized tanks and vessel tank cars.	**Equipment (as required)**	**400**
Special fabrication and development work.	**Equipment (as required)**	**300**
Miscellaneous - other related fabrication and maintenance work in the craft.		**500**
Selected assignments-house-keeping, safety meetings, information meetings, special training, conferences and all other maintenance shop's activities not specified above	**Equipment (as required)**	**400**
	TOTAL HOURS:	**7200**

C. Equipment Operator (Operating Engineers):

Job or Operation	Equipment	Time/Hours
Track type equipment (which shall include the following training categories):	Dozers, Pushcats, Track type loaders, track type backhoes, track type paving machines (concrete and asphalt) tractor drawn scrapers, track type trenching.	1800
TO INCLUDE ALL ATTACHMENT AND SUPPORT EQUIPMENT: LUBRICATION, GRADES AND STAKES, SIGNALS, SOILS AND COMPACTION.		
Rubber tire type equipment (which shall include the following training categories):	Scrapers, rubber tire loaders, motor graders, rubber tire dozers, rubber tire backhoes, rubber tired asphalt, dirt and/or compactor roller, combination backhoe loaders, rubber tired trenchers, rubber tired paving machines, brooms.	1800
TO INCLUDE ALL ATTACHMENT AND SUPPORT EQUIPMENT: LUBRICATION, GRADES AND STAKES, SIGNALS, SOILS AND COMPACTION.		
Hoisting type equipment (which shall include the following training):	Cranes all (including draglines clam shells and pile drivers), Tower cranes, A-frames, Derricks, power shovels, bridge cranes, pavement breakers, other self-propelled boom type lifting devices, concrete pumps, drilling equipment.	3600
	TOTAL HOURS:	7200

D. Heavy Duty Equipment Repairman:

Preventative Maintenance (PM) and Service Categories.....1000

1. General Shop Knowledge:

Familiarity with shop organization safety practices, care and maintenance of hand tools, shop tools and equipment.	**Records and documentation Safety publication (as required) Surfacing machines Hydraulic presses and jacks, Hoists and cranes, Hand tools**
Familiarity with shop publications, i.e., service manuals, parts, books, lube charts, etc.	**As required**
Familiarity with the types of equipment, use and care	**Familiarization and operation of assigned equipment.**
Familiarity with precision instrument, use and care	**Pressure test equipment Measuring tools and devices**

2. Lubrication and Service:

Familiarity with the use of lubrication tools and equipment, both stationary and mobile.	**Air compressors Pneumatic dispensing equipment Hand tools**

Types of lubes, oils fuels and their use.

Lubrication and oiling of equipment.

Testing, trouble shooting, and minor adjustments of equipment.

Cleaning and inspecting parts.

3. Engine Repair and Rebuild Category 2000

Familiarity with applicable service/repair manuals and parts books.

Familiarity with engine repair/rebuild tools, equipment and test procedures

- **Torque wrenches**
- **Hand tools as required**
- **Operation, maintenance, repair and rebuild of:**
  - **Diesel engines**
  - **Gasoline engines with attached drive units:**
  - **Air compressors**
  - **Water pumps**
  - **AC/DC generators**
  - **Electric motors**

- **Troubleshooting and repair of:**
  - **Air systems**
  - **Fuel systems**
  - **Lubrication systems**
  - **Cooling systems**
  - **Engine braking systems**
  - **Electrical starting systems**
  - **Electrical charging systems**

4. Power Train Repair and Rebuild Category: 2000

Familiarity with applicable service/repair manuals and parts books.

Familiarity with power train repair, and rebuild of:

- **Wet and dry clutches**
- **Standard transmissions**
- **Torque converters**
- **Power shift transmissions**
- **Electric drives/traction motors**
- **Drive lines, differential, final drives**
- **Friction and steering clutches**
- **Brakes-air, air hydraulic, electric and mechanical tires, wheels and hub**

5. Control Systems Category 1000

Familiarity with applicable service/repair manuals and parts books.

Familiarity with control system repair/rebuild tools, equipment and test procedures. The operation, troubleshoot, adjust, repair and rebuild of:

- **Mechanical lever system**
- **Cable systems**
- **Hydraulic systems**

Air systems
Electrical and/or combination systems
Control valves

6. Equipment Repair and Maintenance Category 1550

Familiarity with applicable service/repair manuals and parts books.
Familiarity with repair/rebuild, fabrication and welding tools, and equipment.
Troubleshoot, adjust, repair/rebuild and fabricate:
- **Winches and hoisting gear**
- **Undercarriages and tracks**
- **Cabs, frames and bodies**
- **Booms, drums, sheaves and cables**
- **Buckets, clamshells, draglines, ditches and backhoes**
- **Welding and burning (gas and electric), meet training requirements comparable to AWSD1.1**

7. Electrical Systems Category 1000

Familiarity with applicable service/repair schematics, blueprints, manuals and parts books.
Familiarity with electrical systems repair and rebuild tools, equipment and test procedures.
Troubleshoot, adjust, repair and rebuild of:
- **Electrical systems**
- **Instrument panels**
- **Gauges**
- **Switch gear**
- **Solenoids**
- **Electronics**
- **Basic electronic systems**
- **SCR systems**
- **Printed circuits**

TOTAL HOURS: 8550

E. Industrial Carpenter:

	Job or Operation	Hours
1.	Interior finish	4100
	a. Basic cabinet and shelving	
	b. Doors, jams and casings	
	c. Latches and locks	
	d. Closers, stops and exit hardwares	
	e. Formicas and plastic laminates	
	f. Plexiglas	
2.	Interior Systems	650
	a. Framing partitions and curtain walls	
	b. Dry wall on wood, metal and masonry	
	c. Vinyl and patterned dry wall and matched trim	
	d. Ceiling-stickup, suspended, and integrated	
	e. Demountable partitions and pedestal floors	
	f. Wood floors	
3.	Framing and Concrete Framework	700
	a. Framing truss roofs system	
	b. Decking and sheeting	
	c. Framing and layout	
	d. Glue lamination construction connected with hardware	
	e. Concrete forms	
4.	Rigging, Scaffolding, Insulating, Transit and Leveling	450
	a. Scaffolding	
	b. Insulating and sound proofing	
	c. Transit and leveling	
	d. Rigging	
5.	Use of Tools	700
	a. Operation of hand tools	
	b. Operation of power tools	
6.	Miscellaneous	600
	a. Other related work	
	TOTAL HOURS:	**7200**

F. Industrial Locksmith/Safemaster:

Job or Operation	Equipment	Time/Hours
Safety: Use and care of hand and power tools and equipment; Proper use and handling if cleaning agents chemicals and hazardous materials. Company safety policies & procedures	Lathes, Key Machines and other hand and power tools and any manufacture reference materials required by the trade.	500
Reproduction of keys: Duplication (master and code); Identifications (key board and numbers); and Machine operations (duplicating and code machines).	Key machines, manufacture reference materials and parts and materials required by the craft.	350
Lock Cylinder Pinning: Pin tumbler Waiver; Lever; and Warding	Materials and parts as required by the crafts	350
Operation and repair: Doorlock (cylindrical, mortise, surface, panic hardware, and other special designed); electronic devices and keyless locksets). Padlocks, Utility, New lock openings, Picking and bypass; File cabinets and desks	Manufacture reference materials, special hand and power tools and other parts and materials required by the craft.	2000
Lock installation: Doorlocks (metal and wood doors), Cabinets and desks (metal and wood); electronic locks, keyless mechanical and other special applications.	Materials and parts as required by the craft.	325
Master Key Systems (includes master, submaster and grand master systems): Layout establishment/design; Pin tumbler, disk and lever; Pinning charts; and use of key way.	Measuring devices, special hand and power tools as required.	650
Safes and vaults: Installation, repair and adjustment of combination and key locks. Safe	Materials and parts as required by the craft	1500

and vault openings (locking device bypass).		
Selected Assignments: Includes record keeping, safety meeting, informative meetings, conferences and any other maintenance job activities not specified above	**Company records, requisitions and inventories.**	**325**
	TOTAL HOURS:	**6000**

G. Industrial Maintenance Electrician:

Job or Operation	Equipment	Time/Hours
Hand and power tool familiarization*: any activity designed to familiarize the apprentice with nomenclature, care, use and selection of correct tools of craft	Hand tools (as required) Power tools (as required)	200
Material and equipment familiarization: any activity designed to familiarize the apprentice with correct nomenclature and identification of materials and equipment used in the craft.	Materials (as required) Equipment (as required	200
Test equipment: selection, care and use	Voltage tester, volt meters, Ammeters, Watt meters	300
Wiring: makeup and replacement (includes replacement of terminals making up packs, marking, making extension cords, electrical connections, etc.)	Pull wire Splicing Code on wire sizing Other (specify)	500
Light fixtures: replace and maintain (includes relamping)	Incandescent, florescent Heat lamps	400
Simple circuits: replace, test and repair	Light circuits Horns, bells, buzzers, alarms, enunciator circuits and relays, etc.	600
*All tools pertaining to the trade		
Small motors: maintain and repair (includes dismantling, cleaning, assembling, repair or replacement of switches and capacitors, maintaining commutators, brushes and brush (rigging).	Small AC motors Fractional horsepower motors (universal)	600

Large motors: replace, maintain and repair (includes lubrication; repair of ball, roller and sleeve bearings, motor connections; maintaining commutators, brushes and brush rigging).	**Single phase Three phase star Three phase delta Three phase would rotor Direct Current Series Shunt Compounds**	**900**
Transformers: replace and maintain (includes transformer connections oil check, voltage regulator check.)	**Power (star, delta) Potential Current**	**800**
Switches and line starters: replace and repair	**Switches Line starters**	**300**
Relays: maintain, test and set Overcurrent	**Undervoltage Time Differential Pilot wire Phase sequence Volt meters Ammeters**	**200**
Batteries: replace, connect charger, maintain	**Storage Dry-Cell**	**300**
Switchgear: replace, wire, maintain, repair	**Oil type Air type**	**500**
Controls: replace, wire, maintain	**Compressor unloader control Pump controls Electronic liquid level Float and pressure switch**	**300**
Alternators and generators: maintain and repair (includes control circuits and voltage regulators).	**Alternators Generators**	**300**
Control panels: replace, wire, maintain	**As required (specify)**	**200**
Cranes, hoists, and elevators:	**Electric cranes**	**600**

sets, adjust and repair limit switches and control stations	**Electric hoists Electric elevators**	
Communications: replace, repair and maintain	**Phones Teletalks PA system Television**	**500**
Industrial electronics: replace, maintain and repair.	**Motor controls Amplidynes Other (specify)**	**500**
Magnetic clutches and brakes: check, adjust, repair and maintain	**Magnetic clutches Magnetic brakes**	**300**
Conduit bending and installation	**Conduit: Rigid EMT PVC Metallic Flex**	**500**
Programmable controls	**Brand names (facility oriented)**	**500**
Selected assignments based on individual needs: (includes house-keeping, safety meetings, informative meetings, errands and all other maintenance related activities not covered above).	**Specify equipment and/or activity**	**500**
	TOTAL HOURS:	**10,000**

H. Instrument Technician:

Job or Operation	Equipment	Time/Hours
Tools, Materials and spare parts familiarization. Any activity designed to familiarize the apprentice with nomenclature, care, use and selection of correct tools, materials and spare parts of the craft.	Hand tools (as required) Power tools (as required) Materials, (as required) Spare parts (as required)	200
Test equipment and certified test equipment; selection, care and use	Megger, volt meters Ammeters, Watt meters Vacuum tube voltmeters Multimeters Logic probes and testers Oscilloscopes Potentiometers Wheatstone bridges Manometer Electron tube testers Ohmeters on high	600
Pressure and level measurement: instrument replace, calibrate, service, trouble shoot and repair.	Diaphragm gauges Bourdon tube gauges Bell type gauges Helical type gauges Piston type gauges Spiral type gauges Metallic diaphragm gauges Bellow type gauges Limp diaphragm gauges Liquid column gauges Liquid column pressure records Float actuated instruments Electrical contact instruments Static pressure instruments Differential pressure instruments	1200
Temperature measurement instruments-replace, calibrate, service and trouble shoot	Gas filled systems Vapor temperator system Liquid filled system Thermocouples	1000

	Millivolumeter Potentiometer type Deflection Potentiometer type Resistance thermometer Optical pyrometer type Total radiation pyrometer	
Flow measurement instrument - replace, calibrate, service, trouble shoot, and repair.	Inferential types Differential Pressure meter Venturi tube Flow-nozzle Orifice plate Pilot tube Area meters Rotameters Anemometers Electrical meters Volmetric and current type Piston Nutating disk Rotary sliding valve Oscillating piston Rotary bucket Screws, Bellows Electrical meters Roats, Current Magnetic flowmeters	1100
Telemetering systems - replace, calibrate, service, trouble shoot, and repair.	Electrical telemetering Variation in electrical quantities, Null or balance principles, Electrical synchronization, Impulse selection Pneumatic telemetering	400
Automatic control systems - replace, calibrate, service, trouble shoot, and repair	On and off control Proportional control Narrow band, Wide band Floating control Proportional and floating control	300
Electronic instruments - replace,	Pulse type radiation	1200

calibrate, service,	**Detection, trouble shoot, and repair.** **Ionization current** **Radiation detection systems** **Electronic type, potentiometers and wheatstone bridges** **Thermal conductivity gas analyzers, Ph meters** **Conductivity meter** **Leak detectors** **Multi-channel analyzers** **High voltage supplies** **Coincidence and anti-Coincidence analyzers** **D.U. spectrometers** **Process computer/micro processor** **Sanborn multi-channel recorder** **Digital printers, Timing devices and programmers, Foxboro power calculators, reactors, X-Y recorders, Electron para-magnetic resonance, Spectrometer**	
Computers, computer related equipment and Microprocessors, service, troubleshoot and repair.	**DOS, MAC and any CPU bus architecture technology - ISA, EISA etc.** **Hard drives - MFM, ESDI, SCSI, IDE, and RLL.** **Floppy drives - media transfer tape backup, Bernoulli, CD-ROM** **Power supplies, power requirements** **UPS, static control and ripple grounding etc. Memory mapping and management, soldering techniques** **Cabling techniques, file servers.** **VIDEO DISPLAYS:** **Monitor adjustment and repair**	**600**

	Controllers -CGA, EGA, Printers/Peripherals All brands of Laserjets, Paintjets, Thinkjets, Plotters and DOT matrix. Electronic typewriters, FAX machines, Microfiche readers, Blueprint machines, Time clocks, Reader printers, Thermofax machines and payroll and benefit machines.	
COMMUNICATION: Troubleshoot, service and repair communication equipment.	**RS-232/parallel communication, modems/synchronous, asynchronous and related protocol. Network topology, Ethernet concepts, Installation and maintenance of Ethernet backbone, Fiber Optics; operations and splicing. Baseband and broadband cable installation. Microwave equipment.**	**600**
Operating systems/Trouble-shooting, service and repair.	**System software; DOS, OS/2, Xenix, Unix, Windows, Macintosh and other various application software. All peripheral, storage and support utilities. Different types of diagnostics, both hardware and software; Norton Utilities, PC Technician etc.**	**400**
Selected assignments (Note Apprentices should describe assignments in this category only when they cannot be described in the specific terms contained elsewhere in this outline. Work performed on a total system made up of various type components and parts would fit in this category). Includes:	**Confinement instrumentation Process water instrumentation Power level and period instruments Recorders of all types not previously contained in this outline Gas system instruments Power house instruments**	**400**

Safety and informative meetings, housekeeping, and all other maintenance job-related activities not previously covered	**Experimental or test facility instruments** **Heating to ventilation instruments** **Special test equipment**	
	TOTAL HOURS:	**8000**

FLUOR HANFORD INDUSTRIAL MAINTENANCE
APPRENTICESHIP COMMITTEE - REVISED VERSION

I. Lineman:

1. **Poles, arms and guys 500**
2. **Conductors and insulators, switches and cutouts, and other protective devices 500**
3. **Transformers 200**
4. **Service Drops 200**
5. **Rotation and phasing 50**
6. **Safety meeting, care and inspection of safety equipment, switching and lock and tag procedures 100**
7. **Miscellaneous-care and use of hot line tools 150**
8. **Radiation and security training 25**
9. **Cable splicing, termination, and installation 100**
10. **Series street lighting systems 75**
11. **Mechanical equipment operation 100**

TOTAL HOURS: 2000 x 3 =6000

J. Machinist

Job or Operation	Equipment	Time/Hours
Tools and material familiarization* activity designed to familiarize the apprentice with nomenclature, care, use and selection of the craft	As required (specify)	145
Cut-off materials-rough cut to size	Power hacksaw, bandsaw (dual), other (specify)	145
Drill-basic drilling, tapping, reaming, counterboring, and countersinking	Sensitive drill press radial drill press	145
Shape-perform shaping operations on variety of basic shapes	Horizontal shaper, vertical shaper	220
Lathe 9" to 35" range-perform turning operation including tapers, threads, shoulders, chuckboring, drilling reaming and taping.	Engine lathe, turret lathe	650
Milling machine-perform basic milling operations, including slabbing, splining, yearcutting, slotting, use of index head and other supplementary equipment.	Horizontal mill, vertical mill, Universal, Rotary Head	450
Grind-perform surface, cylindrical internal and cutter grinder operations	Surface grinder Pedestal Horizontal spindle Vertical spindle Cylindrical grinder Center type Centerless type Internal grinder	375
Plane-perform routine planer operations	Openside planer Double-housing planer, other	220

	(specify)	
Bore-face, bore, counterbore	Vertical boring mill Horizontal boring mill	300
Jig bore-perform production work as required	Job borer	300
Heat treating-perform softening hardening and case hardening processes.	Ferrous metal	220
Electroplating-perform operations as required.	Cadmium Chromium Copper	220
Machine repair and maintenance-strip down, inspect, make, fit and reassemble machines, or machine components, including preventative maintenance.	As required (specify)	450
Inspection-inspect machine pieces for suitability for production and tool room work.	Precision measuring tools	450
Methods, planning, job estimating work with subfunctions involved.	As required (specify)	450
Development, work with instrument makers and tool and die makers on full line of machine and bench work involved. Complexity of work commensurate with individual capabilities and availability.	As required (specify)	1850
Bench work, file, deburr, degrease, fit scrape, etc.	As required (specify)	220
Selected assignments, including housekeeping, safety meeting, informative meetings, conferences and all other	As required (specify)	390

maintenance job activities not specified above.		
	TOTAL HOURS:	**7200**

K. Maintenance Asbestos Worker/Insulator

Job Operation	Hours
1. Industrial and process plant piping, vessels, equipment, etc. Metal lagging pertaining to insulation. Pre-tab fitting, head covers, and related work fireproofing penetrations	3800
2. Plumbing Heating Air Conditioning Refrigeration and low temperature duct coverings and linings including plenums piping equipment vessels tanks and chillers, etc. Metal lagging pertaining to insulation.	2000
3. Prefabrication Fittings, heads, pads, thermal tapes mitres and layouts.	800
4. Asbestos Abatement Preparation safety removal and encapsulation.	600
TOTAL HOURS:	7200

L. Millwright:

Job or Operation	Equipment	Time/Hours
Familiarization* any activity designed to familiarize the apprentice with care, proper safe use, nomenclature and selection of tools and materials used in the craft.	As required Materials Ferrous Non-ferrous	300
Cut-off materials/perform cutting operation on various kinds of materials	Power hacksaw Bandsaw Bay-flex grinder	145
Drill-perform basic drilling operations	Drill press Portable electric drill Core drill	145
Pneumatic tools-operate	Pneumatic drill Pneumatic wrenches Pneumatic hammers	145
Grinders-perform basic grinding operations	Pedestal grinder Portable grinder	145
Sanders-operate all types	Belt type Rotary type	145
Power actuated equipment-use safely and properly	Ram set Hydraulic pullers and presses	40
Measuring and leveling-use precision equipment in maintenance, fabrication, and replacement of machinery	As required Shaft levels Protractors, Scales Micrometers Dial indicators	145
Equipment and machinery-Replace under direction.	As required (specify)	220
Maintenance and repair-perform maintenance and repair, including setting of machinery and coupling alignment of equipment under	As required (specify) Pumps Compressors Fans	400

direction.		
Bench work-file, ream, scrape, tap, chip, hone, sharpen tools, cut gaskets, operate portable tools, fabricate templates, brackets, etc., test, check and inspect equipment.	**As required (specify)**	**550**
Equipment and machinery-replace, erect, move and assemble (includes use of slings hitches, pulleys, blocks and chin hoist placing benches, tables, tanks, etc., leveling machinery, tighten hold-down bolts test, inspect)	**Plant machinery and equipment, minor scaffolding special equipment machine guards and housing, templates, footings**	**1625**
General maintenance and repair-maintain, trouble shoot, repair, rebuild and modify plant machinery and equipment (includes outages).	**Pumps, compressors, turbines and other ship equipment, hydraulic and mechanical systems**	**2720**
Selected assignments-includes housekeeping, safety and information meetings, errands and all other job related activities not covered above.	**As required (specify)**	**475**
	TOTAL HOURS:	**7200**

M. Painter/Decorator:

	Job Operation	Hours
1.	Preparation of surfaces	800
2.	Operation and care of tools and equipment	500
3.	Materials used in painting and decorating (architectural)	800
4.	Application	1100
5.	Color matching and mixing	100
6.	Metal preparation (pressure blast, grinding, etc.)	800
7.	Spray painting airless and conventional	800
8.	Application and embedment of tape	500
9.	Applications of first skim coat over tape hand application	250
10.	Application of second skim coat over tape hand application	250
11.	Detail work (hand operation)	350
	a. Touching up bad joints	
	b. Nail spotting - 1st, 2nd, 3rd coats	
	c. Filling metal corner guard and metal edge trim	
12.	Finishing of angles hand operation	200
13.	Finishing, sanding and final checkout	200
14.	Application of texture (including spray application)	400
	a. spray application of fog and spatter wall texture	
	b. skip trower texture	
	c. Application of thin wall surfacing texture	
	d. Proper masking procedures	
15.	Final cleanup	150
	Floors, jambs, window frames, etc.	
	TOTAL HOURS:	**7200**

N. Plumber-Steamfitter:

Job or Operation	Equipment	Time/Hours
Hand tool and materials familiarization* any activity designed to familiarize the apprentice with the nomenclature, care, proper and safe use, and selection of the hand tools and materials used in the craft. (Includes broken bolt, stud and tap removal; sharpening drills, punches, etc.; hand sawing metal blocks, tubing and pipe; reaming holes; drilling holes in metal; identifying different types of pipe, tubing fittings and valves with their use).	Metal cutting chisels Hand hacksaws Hand files Wrenches (all types) Screw Drivers Punches and drifts Pliers and hammers Plumb, level and square Taps and dies Gasoline and acetylene torch (for heating) Twist drills Reams, Tube benders	530
Power tool familiarization*, any activity designed to familiarize the nomenclature, care, proper and safe use, and selection of the power tools used in the craft.	Pneumatic and electric sanders and grinders Pneumatic and electric wire brush, portable pneumatic and electric drills, Impact wrenches Pneumatic hammers, power hacksaws, other power tools (specify).	530
Codes: study and become familiar with each code and its application, learn how to look up information.	National plumbing code #ASA A408, pressure piping code #ASA B31.10, (power piping section and fabrication details section), HAPO codes and accident prevention standards.	60
Pipe threading and cutting: cut and thread pipes of various types and sizes (including assembling fittings on pipe, oiling and cleaning pipe machines, dies, etc.).	Pipe cutting machines, pipe, threading machines, dies, etc. Fittings as required.	1000

Measurement and layout: apply methods of measurement and layout, plan job, make material lists, layout and set up pipe for welding, cutting and brazing.	**As required (specify)**	**1000**
Pipefitting: perform pipefitting operations, includes: **Making templates** **Cutting metal tubing** **Reaming pipe** **Cutting pipe threads** **Bending tubing** **Making up threaded joints** **Replacing and making up flanges and flanged fittings** **Cutting gaskets** **Packing bell and spigot joints** **Making solder joints (silver & soft)** **Repairing and replacing pressure control and pressure reducing valves** **Replacing and servicing safety and relief valves** **Replacing and servicing glove, angle, gate and check valves** **Regrinding glove and angle valve seats** **Repacking valve stems** **Replacing and servicing steam traps** **Replacing pipe supports (single rod, double rod, spring type) from basin clamps and/or on pedestal hangers** **Replacing orifice flanges and plates** **Testing pipe hydrostatically** **Solvent welding and threading of plastic pipe** **Flaring PVC pipe ends** **Drilling and tapping under pressure** **Replacing and servicing strainers and filters**	**As required (specify)**	**3900**

Refrigeration units: replace, service trouble shoot and repair	**As required**	**1000**
Air conditioning units: replace service trouble shoot and repair	**As required**	**250**
Maintenance: maintaining and repairing piping systems in plant areas	**Steam systems, water systems, Air systems Piping and control systems**	**1320**
Selected assignments: includes house-keeping, safety and informative meetings, errands and all other job-related maintenance activities not specifically mentioned above.	**As required**	**410**
	TOTAL HOURS:	**10,000**

Included in the work process hours are the handling, rigging, setting and erection of all related piping, equipment, use and care of associated tools and apprenticeship skills.

O. Sheet Metal:

Job or Operation	Equipment	Time/Hours
Hand and power tool familiarization, any activity designed to familiarize the apprentice with nomenclature, care, use, selection and safety considerations of correct tools of craft.	Hand tools (as required) Circle cutters Power shear Power break Power punch* Angle iron notcher Power and hand rolls Specialty hand power tools Belt sander Air powered tools Powdered actuated gun Drill press Band saw	900
Material and equipment familiarization any activity designed to familiarize the apprentice with correct nomenclature and identification of material used in the craft.	Material (as required) Equipment (as required)	200
Shop systems familiarization - consisting of traveler, work order schedules, instruction, QA practices, general blueprint and applicable code orientation.	Equipment (as required)	450
General sheet metal work-layout, duct, assembly, vessel sheathing, soldering, welding and brazing.	Equipment (as required)	2300
Heating, ventilation and air-conditioning-routine maintenance and installation.	Equipment (as required)	1050
Tanks hoods, glove boxes, filter boxes, filter frames, fabrication, installation and repair.	Equipment (as required)	1200
Special fabrication and development work.	Equipment (as required)	1300

Special and general exhaust duct system	**Equipment (as required)**	**400**
General building maintenance-roofing, down spouts, gutters, repair and assemblies of metal furniture, and repair of solar heating and cooling systems.	**Equipment (as required)**	**200**
Miscellaneous - other related fabrication and maintenance work in the craft.	**Equipment (as required)**	**600**
Selected assignments - housekeeping, safety meetings, information meetings, special training, conferences and all other maintenance shop activities not specified above	**Equipment (as required)**	**400**
	TOTAL HOURS:	**9000**

P. Sign and Pictorial Painter

Job or Operation	Equipment	Time/Hours
The proper use and maintenance of all tools and materials: Familiarize apprentice with nomenclature, care, use, selection and safety considerations of correct tools and materials of the craft.	Brushes Equipment Materials Tools	325
Building and construction of signs: Any activity designed to familiarize the apprentice with the correct building and construction of metal, wood, sectional, canvas, composition, and glass signs.	Material (as required) Equipment (as required)	275
Preparation and treatment of surfaces for painting: The proper cleaning, priming filling, sanding, and sizing of surfaces for painting.	Material (as required) Equipment (as required)	350
Preparation of Applications (Mixing and Matching): The proper mixing and matching of paints, varnishes, inks, water colors, enamels, and smalts.	Material (as required)	800
Layout: The proper procedure for layout of outlining, sealing, lettering, sketching, spacing, measurements, and blueprints.	Tools and Material (as required)	1000
Actual Application: The proper procedure and safety requirements for the application of paint, varnishes, inks, watercolors, enamels, malts, metal leaf, decalcomania's.	Equipment (as required) Material (as required)	800
Lettering and Cutting In: The proper method for lettering and	Tools (as required)	1100

cutting in of letters, objects, signs and pictorial paintings.		
Pattern Procedure: The proper methods for tracing, pouncing, stenciling, sanding, and processing.	**Tools, Equipment and Material (as required)**	**600**
Designing: Proper procedure and design for pictorial lettering.	**Equipment (as required) Material (as required)**	**600**
Selected assignments and Miscellaneous: Housekeeping, safety meetings, information meetings, special training, conferences and any other activities not specified above.		**150**
	TOTAL HOURS:	**6000**

Q. Substation Maintenance Electrician:

1. **Codes, National and State 25**

2. **Safety Meetings**
   - a. **Lock and Tag Procedure-Clearance 10**
   - b. **Job Hazard Breakdown 10**
   - c. **Pre-Job Safety Plan 10**
   - d. **Radiation Training 10**
   - e. **Care of Safety Equipment 10**
   - f. **Checking for Energized Circuits 10**

3. **Rubber Goods: Including gloves, blankets, hoods, and line hose 10**

4. **Switch sticks and Hot Line Tools, Clean, inspect, repair and test. 10**

5. **Regulators and L.T.C.S. 50**
   Perform PM work according to time frequency

6. **Motor operated mechanism for 230 KV Disconnects 32**
   Perform PM work according to time frequency.

7. **Metal Clad Switch Gear 50**
   Perform PM work according to time frequency.

8. **Transformers, 2.4kv and 13.8kv distribution 150**
   - a. **Wiring and connection**
   - b. **Overhaul**
     - (1) **bushing work**
     - (2) **gasket work**
     - (3) **oil work**
     - (4) **testing**

9. **Transformers, 230kv Primary 150**
   - a. **Wiring and connections**
   - b. **Bushing work**
   - c. **Testing**

10. **Transformers, instruments 30**
    - a. **Wiring and connections**
    - b. **Testing**

11. **Batteries, lead acid 150**
    - a. **Cleaning**
    - b. **Adding water**
    - c. **Overcharging**

d. Specific gravity
e. Voltage readings
f. Wiring and connections
g. Battery charger trouble shooting

12. Circuit breakers 600 volt, 5, 7.5 and 15kv 230kv oil and air 500
a. Perform PM according to time frequency
b. Perform tests according to time frequency

13. Cable, power, 5 and 15kv shielded & non-shielded 50
a. Cable installation
b. Stress Relief Cone Installation
c. High Voltage Testing

14. Ground Detection Systems 15
Perform PM according to time frequency.

15. Sub-station Inspection 125
a. Perform inspection according to time frequency
b. Properly fill in inspection sheets.

16. Portable Tool Inspection 16
Learn to use test equipment

17. Total combustible Gas Analysis Set 125
a. T.C.G. Analysis
b. Oxygen Content

18. Oil sampling and testing including Askarel 100
a. Power factor testing of oil
b. Acid test
c. KVBD
d. Interfacial Tension (I.F.T.)
e. Oil and Askarel filtering

19. 230kv O.C.B. Operational Check 8

20. Ladder Inspection 12

21. Fire Extinguisher Inspection 12

22. Blueprint work 50
a. Wiring
b. Terminating
c. Point-to-point

23. Installation and maintenance of motor 16

24. Shop Repair of Electrical Equipment 100

25. Use of test equipment

- **a. Doble Test Set Type 24**
- **b. Kelvin Bridge 8**
- **c. Transformer turn ratio set (T.T.R.) 8**
- **d. Megger Test Sets 16**
  - **(1) 500 and 1000 volt**
  - **(2) 2500 volt motor driven polarization index**
- **e. Double Motion Analyzer Type TR-1 .....24**
- **f. D-C Hy-Pot System 24**
- **g. Ohmeter, 260 Simpson 10**
- **h. Ductor Set 16**
- **i. Phasing Too, use of 8**
- **j. Multi-amp Test Set 16**

TOTAL HOURS: 2000 x 4 = 8000

IX. RELATED/SUPPLEMENTAL INSTRUCTION:

The apprentice must attend related/supplemental instruction. Time spent in related/supplemental instruction will not be considered as hours of work, and the apprentice is not to be paid for time so spent, unless otherwise stated in these Standards.

The sponsor/training agent must provide for instruction of the apprentice during the related/supplemental instruction in safe and healthful work practices in compliance with the Washington Industrial Safety and Health Act, and applicable federal and state regulations.

In case of failure on the part of any apprentice to fulfill this obligation, the sponsor has authority to take disciplinary action (see Administrative/Disciplinary Procedures section).

Clock hours of actual attendance by the apprentice in related/supplemental instruction classes at the community/technical college or other approved training locations shall be reported to L&I on a quarterly basis for verifying attendance and industrial insurance purposes.

For industrial insurance purposes, the WSATC will be considered as the employer should any apprentice, not being paid to attend, sustain an injury while participating in related/supplemental classroom activity, or other directly related activity outside the classroom. The activities must be at the direction of the instructor.

The methods of related/supplemental training must consist of one or more of the following:

(X) Supervised field trips

(X) Approved training seminars

(X) A combination of home study and approved correspondence courses

(X) State Community/Technical college

( ) Private Technical/Vocational college

(X) Training trust: **LU112, NECA, Local 77**

(X) Other (specify)
1. **Community college courses when available. Also, various training trusts pertaining to the crafts in the program at the time.**
2. **HAMMER**

144 Minimum RSI hours per year, (see WAC 296-05-305(5))

Additional Information:

If the Apprenticeship Agreement is revoked, the employee will be removed from the employment of Fluor Hanford unless a suitable other job opening for which the apprentice is qualified is available.

X. ADMINISTRATIVE/DISCIPLINARY PROCEDURES:

Sponsors may include in this section requirements and expectations of the apprentices and training agents and an explanation of disciplinary actions that may be imposed for noncompliance. The sponsor has the following disciplinary procedures that they may impose: Disciplinary Probation, Suspension, or Cancellation.

Disciplinary Probation: A time assessed when the apprentice's progress is not satisfactory. During this time the program sponsor may withhold periodic wage advancements, suspend or cancel the apprenticeship agreement, or take further disciplinary action. A disciplinary probation may only be assessed after the initial probation is completed. During the disciplinary probation, the apprentice has the right to file an appeal of the committee's action with the WSATC (as described in WAC 296-05-009).

Suspension: A suspension is a temporary interruption in progress of an individuals apprenticeship program that may result in the cancellation of the Apprenticeship Agreement. Could include temporarily not being allowed to work, go to school or take part in any activity related to the Apprenticeship Program until such time as the Apprenticeship Committee takes further action.

Cancellation: Refers to the termination of an apprenticeship agreement at the request of the apprentice, supervisor, or sponsor. (as described in WAC 296-05-009).

A. General Procedures

1. Apprentices' Hours and Supervision:

a. Hours of Work and Overtime Rates:

Articles VII and VIII of the current contract between the HAMTC and FHI relating to hours of work and overtime premium rates, respectively, will apply where appropriate to apprentices.

b. Supervision:

The apprentice shall be rotated among the major job processes by assignment from the Supervisors. Supervisors shall have the overall responsibility for apprentice training.

c. Transfers:

Apprentices will be subject to transfer for training purposes without reference to the provisions of the current contract between the HAMTC and FHI. FHI will schedule transfers in advance so that the apprentices concerned will have reasonable notice thereof.

2. Relationship of Apprenticeship Standards to Union Contract:

All provisions of the existing bargaining agreement between Fluor Hanford and the Union shall apply to apprentices except as may be modified by these Standards.

3. Evaluation of Past Training and Experience:

Past training and experience related to the craft in which the apprentice is receiving training may be considered for credit toward completion of apprenticeship time. Credit will be granted at the time of employment but may be reviewed during the probationary period of apprenticeship by the Apprenticeship Committee. There will be neither any retroactive payment of wages nor any reduction of wages as a result of change following such review. The Committee will regularly review apprentices' progress and may grant upgrade to journey-level worker early if justified.

4. Rules:

a. The Apprenticeship Committee shall elect a Chairman and Secretary from their membership on the Committee. The Chairman and Secretary offices shall rotate each year with the Fluor Hanford Management Representative being Chairman on odd years, and the Union Representative being Chairman on even years. The Secretary shall be the opposite, Fluor Hanford management on even years and Union on odd years.

b. Whenever, for any reason, a vacancy shall occur among the members or designated alternates of the Apprenticeship Committee, the vacancy shall be filled by appointment by the party who selected the member who has vacated.

c. Whenever, for any reason, a vacancy shall occur of the Chairperson and Recording Secretary. Vacancies shall be filled as described in Section X.4.b above.

d. The Apprenticeship Committee shall hold regular meetings at intervals determined by the apprenticeship Committee based upon the business to

be conducted. In no case shall there be less than three (3) meetings a year with each meeting to be held on a separate working day. The minutes of each meeting shall record all official actions of the apprenticeship Committee.

5. **At all meetings of the Apprenticeship Committee, each member or a designated alternate vested with the authority to act shall be in attendance. Attendance at meetings by fifty percent (50%) of the Committee shall be necessary to constitute a quorum for all purposes. A quorum shall consist of equal representatives of management and employee members. All decisions and the resolution of all questions, disputes, or complaints shall require agreement by a majority vote of such quorum. Decisions reached by a majority vote of the Committee are binding upon Fluor Hanford and the Union and shall not be subject to the contractual grievance procedure.**

6. **Functions:**

   The Apprenticeship Committee shall, in general, be responsible for the successful operation of the program. In addition to the other functions set forth in these Standards, the Apprenticeship Committee will be required to:

   a. **Review the listing of work processes with time allotments for each craft and recommend revision as required.**

   b. **Review and act on reports and recommendations made to it.**

   c. **Assure use of qualified journey level workers for the "on-the-job" training of apprentices.**

   d. **Check the progress of each apprentice, both on the job and in the related classroom instruction.**

   e. **Counsel with an apprentice who fails to make satisfactory progress either in on-the-job instruction or in the related classroom instruction.**

7. **Layoffs for Lack of Work:**

   a. **Whenever in its judgment the state of business demands it, Fluor Hanford may layoff apprentices for lack of work.**

   b. **In the event of layoff, the layoff will be in accordance with the HAMTC contract.**

8. **Application of Fluor Hanford Rules and Regulations:**

All Fluor Hanford rules and regulations apply to apprentices except as may be modified by these Standards. Violation of such rules and regulations shall make the apprentice subject to disciplinary action the same as any other employee represented by the Union, provided such action does not conflict with the provisions of these Standards.

9. Costs of Related Classroom Instruction:

Tuition fees and costs of text books required for the related classroom instruction will be paid for by the Fluor Hanford.

10. Approval of Standards:

Before becoming operative, these Standards must be approved by the Washington State Apprenticeship and Training Council.

11. Termination:

a. This apprenticeship program and all collateral agreements will expire as described in Article XXIII of the current collective bargaining labor agreement between FHI and HAMTC unless Fluor Hanford and the HAMTC mutually agree to an extension of the program.

b. Individual apprenticeship agreements shall automatically terminate when the apprentices' employment terminates with Fluor Hanford.

B. Local Apprenticeship Committee Policies

NONE

C. Complaint and Appeal Procedures:

All approved programs must establish procedures explaining the program's complaint review process. Complaints that involve matters covered by a collective bargaining agreement are not subject to the complaint review procedures in this section.

Complaint (after initial probation completed) – WAC 296-05-009 and 296-05-316(21)

Prior to: 20 days of intention of disciplinary action by a committee/organization

- Committee/organization must notify the apprentice in writing of action to be taken
- Must specify the reason(s) for discipline, suspension, or cancellation
- Decision will become effective immediately
- Written reason(s) for such action will be sent to the apprentice

Within: 30 days request for reconsideration from the committee

- Apprentice to request local committee to reconsider their action

Within: 30 days of apprentice's request for reconsideration

- Local committee/organization must provide written notification of their final decision

If apprentice chooses to pursue the complaint further:

Within: 30 days of final action

- Apprentice must submit the complaint in writing to the supervisor (L&I)
- Must describe the controversy and provide any backup information
- Apprentice must also provide this information to the local committee/organization

Within: 30 days for supervisor to complete investigation

- If no settlement is agreed upon during investigation, then supervisor must issue a written decision resolving the controversy when the investigation is concluded

If the apprentice or local committee/organization disputes supervisor decision:

Within: 30 days of supervisor's decision, request for WSATC hearing

- Request must be in writing
- Must specify reasons supporting the request
- Request and supporting documents must be given to all parties
- WSATC must conduct the hearing in conjunction with the regular quarterly meeting

Within: 30 days after hearing

- WSATC to issue written decision

XI. COMMITTEE – RESPONSIBILITIES AND COMPOSITION

NOTE: The following is an overview of the requirements associated with administering an apprenticeship committee and/or program. These provisions are to be used with the corresponding RCW and/or WAC.

The sponsor is the policymaking and administrative body responsible for the operation and success of this apprenticeship program. A committee is responsible for the day-to-day operations of the apprenticeship program and they must be knowledgeable in the

process of apprenticeship and/or the application of Chapter 49.04 RCW and Chapter 296-05 WAC. Sponsors must develop procedures for:

A. Committee Operations (WAC 296-05-316): (Not applicable for Plant Programs) Convene meetings at least three times per year of the program sponsor and apprenticeship committee attended by a quorum of committee members as defined in the approved Standards. If the committee does not indicate its definition of quorum, the interpretation will be "50% plus 1" of the approved committee members. Conference call meetings may be conducted in lieu of regular meetings but must not exceed the number of attended meetings and no disciplinary action can be taken during conference call meetings.

B. Program Operations (Chapter 296-05 WAC - Part C & D):

1. The sponsor will record and maintain records pertaining to the local administration of the apprenticeship program and make them available to the WSATC or its representative on request.

   Records required by WAC 296-05-400 through 455 (see Part D of Chapter 296-05 WAC) will be maintained for five (5) years; all other records will be maintained for three (3) years.

2. The sponsor will submit to L&I through the assigned state apprenticeship coordinator the following list:

   Forms are available on line at http://www.LNI.wa.gov/scs/apprenticeship or from your assigned apprenticeship coordinator.
   - Apprenticeship Agreement Card – within first 30 days of employment
   - Authorization of Signature - as necessary
   - Authorized Training Agent Agreements (committee approving or canceling) – within 30 days
   - Apprenticeship Committee Meeting Minutes – within 30 days of meeting (not required for Plant program)
   - Change of Status – within 30 days of action by committee, with copy of minutes
   - Journey Level Wage – at least annually, or whenever changed
   - Revision of Standards and/or Committee Composition - as necessary
   - RSI (Quarterly) Reports:
     1st quarter: January through March, by April 10
     2nd quarter: April through June, by July 10
     3rd quarter: July through September, by October 10
     4th quarter: October through December, by January 10

3. Adopt, as necessary, local program rules or policies to administer the apprenticeship program in compliance with these Standards that must be submitted for L&I approval and updating these Standards. The L&I

apprenticeship program manager may administratively approve requests for revisions in the following areas of the Standards:

- Program name
- Section III: Conduct of Program Under Washington Equal Employment Opportunity Plan
- Section VII: Apprentice Wages and Wage Progression
- Section IX: Related/Supplemental Instruction
- Section XI: Committee - Responsibilities and Composition (including opening statements)
- Section XII: Subcommittees
- Section XIII: Training Director/Coordinator

C. Management of Apprentices:

1. Each apprentice (and, if under 18 years of age, the parent or guardian) will sign an apprenticeship agreement with the sponsor, who will then register the agreement, with L&I before the apprentice attends the related/supplemental instruction classes, or within the first 30 days of employment as an apprentice. For the purposes of industrial insurance coverage and prevailing wage exemption under RCW 39.12.021, the effective date of registration will be the date the agreement is received by L&I.

   L&I must be notified within 30 days of program approval, of all requests for disposition or modification of agreements, with a copy of the committee minutes approving the changes, which may be:
   - Certificate of completion
   - Additional credit
   - Suspension (i.e. military service or other)
   - Reinstatement
   - Cancellation and/or
   - Corrections

2. Rotate apprentices in the various processes of the skilled occupation to ensure the apprentice is trained to be a competent journey-level worker.

3. Periodically review and evaluate apprentices before advancement to the apprentice's next wage progression period. The evidence of such advancement will be the record of the apprentice's progress on the job and during related/supplemental instruction.

4. The sponsor has the obligation and responsibility to provide, insofar as possible, continuous employment for all apprentices in the program. The sponsor may arrange to transfer an apprentice from one training agent to another, or to another sponsor when the sponsor is unable to provide reasonably continuous employment, or they are unable to provide apprentices the diversity of experience necessary for training and experience in the various work processes as stated in

these Standards. The new sponsor or training agent will assume all the terms and conditions of these Standards. If, for any reason, a layoff of an apprentice occurs, the apprenticeship agreement will remain in effect unless canceled by the sponsor.

5. An apprentice who is unable to perform the on-the-job portion of apprenticeship training may, if the apprentice so requests and the sponsor approves, participate in related/supplemental instruction, subject to the apprentice obtaining and providing to the sponsor written requested document/s for such participation. However, time spent will not be applied toward the on-the-job portion of apprenticeship training.

6. Hear and adjust all complaints of violations of apprenticeship agreements.

7. Upon successful completion of apprenticeship, as provided in these Standards, and passing the examination that the sponsor may require, the sponsor will recommend that the WSATC award a Certificate of Completion of Apprenticeship. The program will make an official presentation to the apprentice that has successfully completed his/her term of apprenticeship.

D. Training Agent Management:

1. Offer training opportunities on an equal basis to all employers and apprentices. Grant equal treatment and opportunity for all apprentices through reasonable working and training conditions and apply those conditions to all apprentices uniformly. Provide training at a cost equivalent to that incurred by currently participating employers and apprentices. Not require an employer to sign a collective bargaining agreement as a condition of participation.

2. Determine the adequacy of an employer to furnish proper on-the-job training in accordance with the provisions of these Standards. Require all employers requesting approved training agent status to complete an approved training agent agreement and comply with all federal and state apprenticeship laws and the appropriate apprenticeship Standards.

3. Submit approved training agent agreements to the department with a copy of the agreement and/or the list of approved training agents within thirty days of committee approval. Submit rescinded approved training agent agreements and/or the list of approved training agents to the department within thirty days of said action.

E. Composition of Committee: (see WAC 296-05-313)

Apprenticeship committees must be composed of an equal number of management and non-management representatives composed of at least four members but no more than twelve. If the committee does not indicate its definition of a quorum, the interpretation will be "50% plus 1" of the approved committee members.

FLUOR HANFORD INDUSTRIAL MAINTENANCE APPRENTICESHIP COMMITTEE - REVISED VERSION

Apprenticeship committees shall elect a chairperson and a secretary who shall be from opposite interest groups, i.e., chairperson-employers; secretary-employees, or vice versa; EXCEPT, this does not apply where the Registration Agency represents the apprentice(s).

For plant programs the WSATC or the department designee will act as the employee representative.

Quorum: **Attendance at meetings by fifty percent (50%) of the Committee shall be necessary to constitute a quorum for all purposes. A quorum shall consist of equal representatives of management and employee members. All decisions and the resolution of all questions, disputes, or complaints shall require agreement by a majority vote of such quorum. Decisions reached by a majority vote of the Committee are binding upon Fluor Hanford and the Union and shall not be subject to the contractual grievance procedure.**

Program type administered by the committee: **Individual Joint**

The employer representatives shall be:

Maurice F. Duffield, Chairperson **PO Box 1000, H8-24** **Richland, WA 99352**	**Richard Gonzalas** **PO Box 1000, L6-81** **Richland, WA 99352**
Terry Ostrander **PO Box 1000, T2-10** **Richland, WA 99352**	**Wayne Mooney, Alternate** **PO Box 1000, T6-29** **Richland, WA 99352**
John Rush, Alternate **PO Box 1000, N1-87** **Richland, WA 99352**	**Gerald F. Saskowsky, Alternate** **PO Box 1000, H8-24** **Richland, WA 99352**

The employee representatives shall be:

Lester Myers, Secretary
PO Box 1000, N1-94
Richland, WA 99352

Fred E. McClure
PO Box 1000, S2-95
Richland, WA 99352

Bruce Gradisher, Alternate
PO Box 1000, N2-70

Sonny Trenti
PO Box 1000
Richland, WA 99352

Jim Millbauer
PO Box 1000, T1-31
Richland, WA 99352

Leo Ausere, Alternate
PO Box 1000, T3-28

XII. SUBCOMMITTEE:

Subcommittee(s) approved by L&I, represented equally from management and non-management, may also be established under these Standards, and are subject to the main committee. All actions of the subcommittee must be approved by the main committee.

NONE

XIII. TRAINING DIRECTOR/COORDINATOR:

The sponsor may employ a person(s) as a full or part-time training coordinator(s)/training director(s). This person(s) will assume responsibilities and authority for the operation of the program as are delegated by the sponsor.

NONE