

IBEW



LOCAL UNION 1245

30 ORANGE TREE CIRCLE
VACAVILLE, CA 95687
P.O. BOX 2547, VACAVILLE, CA 95696

PERRY ZIMMERMAN, BUSINESS MANAGER
EDWARD MALLORY, PRESIDENT

(707) 452-2700
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20 June 2005

Mr. Stephen A. Rayburn
Director and Chief Negotiator
Industrial Relations Department
Pacific Gas and Electric Company
2850 Shadelands Drive, Suite #100
Walnut Creek, California 94598

RE: Letter of Agreement R1-05-22-PGE

Dear Mr. Rayburn:

Enclosed please find one fully executed copy of Letter of Agreement R1-05-22-PGE for your files.

Pursuant to discussions between the parties, this Letter of Agreement is being signed with the understanding that Utility Operators-Hydro will also receive a three percent (3%) increase on January 1, 2006 along with the General Wage Increase.

Thank you for your cooperation in this matter.

Sincerely,

A handwritten signature in cursive script that reads "Perry Zimmerman".

PERRY ZIMMERMAN
Business Manager

:kmk
Attachment



**Pacific Gas and
Electric Company.**

LETTER AGREEMENT NO. R1-05-22-PGE

IBEW



PACIFIC GAS AND ELECTRIC COMPANY
INDUSTRIAL RELATIONS DEPARTMENT
2850 SHADELANDS DRIVE, SUITE 100
WALNUT CREEK, CALIFORNIA 94598
(925) 974-4104

INTERNATIONAL BROTHERHOOD OF
ELECTRICAL WORKERS, AFL-CIO
LOCAL UNION 1245, I.B.E.W.
P.O. BOX 2547
VACAVILLE, CALIFORNIA 95696
(707) 452-2700

STEPHEN A. RAYBURN,
DIRECTOR AND CHIEF NEGOTIATOR

PERRY ZIMMERMAN,
BUSINESS MANAGER

June 1, 2005

Mr. Perry Zimmerman, Business Manager
Local Union No. 1245
International Brotherhood of
Electrical Workers, AFL-CIO
P.O. Box 2547
Vacaville, CA 95696

Dear Mr. Zimmerman:

On February 13, 2004 the Union requested to develop a formal training program for the Water System Operator classification and to review their pay and job duties. The Company agreed to discuss the issues raised by the Union but also wanted to discuss other Hydro and Water Department concerns. The following is a result of those negotiations. The Company proposes the following modifications to the Agreement pursuant to the provisions of Sections 204.4, 205.19 and 206.12.

Water Department:

Elimination of the Water Department and movement of those classifications into the Electric Maintenance Department.

Water System Operator:

Include Water System Operator (WSO) duties into the Hydro Operator Line of Progression and create a new Utility Operator – Hydro (Attachment 1). The incumbent WSO may volunteer to take the new position and be eligible for the higher rate of pay or remain as a WSO - PIO.

Bidding and Demotion:

The Hydro System Operators bidding and demotion rights are the same as those described in System Operator Letter Agreement 05-21. The current Hydro System Operators and T&D System Operators maintain their "c" rights across disciplines and the current HOIT's and OIT's are "c" bidders when they top out.

Wages:

Attached is a wage schedule for Utility Operator - Hydro, Hydro Operator-in-Training, Hydro Roving Operator, Hydro Operator and Hydro Operator - Helms (Attachment 2). The effective date of the wages will be the same as the effective date described in the System Operator Letter Agreement No. 05-21.

Training Program:

The Company will use the training program for Hydro Operators as provided in Letter Agreement 02-12. The Company may fill Hydro OIT vacancies on a one-for-one basis as unrestricted appointments on a system-wide basis. The Company may establish San Ramon as a hiring location for new hires at the Company's discretion (Attachment 3).

Mr. Perry Zimmerman

-2-

June 1, 2005
L/A R1-05-22-PGE

If you are in accord with the foregoing, and agree thereto, please so indicate in the space provided below and return one executed copy of this letter to the Company.

Very truly yours,

PACIFIC GAS & ELECTRIC COMPANY

By: 

Stephen A. Rayburn
Director and Chief Negotiator

The Union is in accord with the foregoing and agrees thereto as of the date hereof.

LOCAL UNION NO. 1245, INTERNATIONAL
BROTHERHOOD OF ELECTRICAL WORKERS, AFL-CIO

June 20, _____, 2005

By: 

Perry Zimmerman
Business Manager

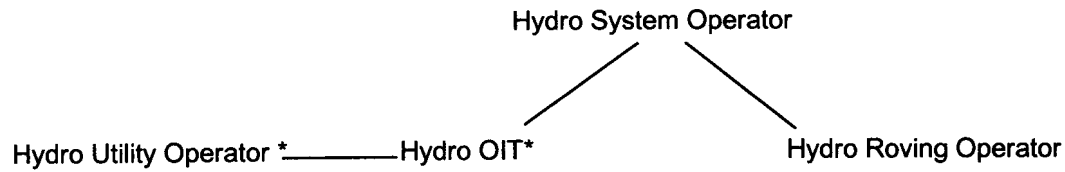
1824 Utility Operator – Hydro (formerly WSO)

An employee who cleans, patrols, maintains, makes minor repairs to and is responsible for the flow and level of water in canals, flumes, gates, tunnels, siphons, penstocks, gauging stations, canal alarms, spill channels, trash rakes, fish ladders, fish screens, dams, reservoirs and their related facilities and equipment. Inspects and operates such facilities as assigned. The employee shall maintain and install measuring devices and regulate diversions to customers. Shall perform such duties as routine electrical, mechanical and building maintenance as assigned and for which an employee has been properly trained in hydro plants, substations, camps, water collection and delivery systems, stream gauges and on their related facilities. Performs routine tests on automatic equipment, keeps records, and cares for buildings and grounds. May be required to receive and dispatch calls by telephone or radio dealing with service to customers. The employee is required to fly in a helicopter to perform the duties of the position. If required, must possess a Class A Commercial Driver's License. May also be required to operate and provide routine maintenance for water treatment systems (such as chlorination systems) and may be required to pass a Treatment Plant Operators' test for State certification to operate such water treatment systems. Residency may also be required. May also be required to operate and provide routine maintenance for weather stations. May be assigned to maintenance crews.

Hours of Work

Pursuant to the provisions of Section 202.16 of the Agreement, Company and Union are in accord that a Utility Operator – Hydro may be required to work a schedule of ten consecutive workdays with four consecutive days off. Under such provisions the parties are also in accord that a UOH may be assigned to a shift schedule due to irregular water conditions which may arise.

May be required to work a schedule of workdays other than Monday through Friday or Tuesday through Saturday.



* Beginners Classification

Note: OIT must be 3rd step to qualify for next lower to HSO or HRO

Hydro Operating Line of Progression:

1824 Utility Operator - Hydro
Beginner's Classification

1825 Hydro Operator-in-Training
Beginner's Classification

1826 (1827) Hydro Operator (Un)

Next Lower Classification

1825 Hydro Operator-in-Training

Same or Higher Classifications

1826 (1827) Hydro Operator (Un)
1740 Roving Operator – Hydro
1819 Hydro Operator - Helms

Hydro Ad Hoc Wage Proposals

Company proposes an additional 3% over the negotiated 2006 GWI for Hydro Operator, Hydro Operator - Helms. The effective date of the increase will be as described in System Operator Letter Agreement 05-21.

1824 Utility Operator - Hydro (Water Systems Operator)

	2005	Proposed 2005
Start	1040.75	739.85
6 months	1071.30	833.05
1 year	1093.50	925.80
18 months	-	1018.80
24 months	-	1142.60

*New title is Hydro Utility Operator (pay matches Utility Worker w/24 mo step added)

1825 Hydro Operator-In-Training

	2005	Proposed 2005
Start	900.45	No Change
6 months	1051.80	No Change
10 months (automatic)	1142.60	No Change

1740 Roving Operator – Hydro

	2005	Proposed 2005
Start	1319.80	1359.40
6 months	1335.00	1375.05

1826 (1827) Hydro Operator (Un)

	2005	Proposed 2005
Start	1403.05	1445.15
6 months	1422.90	1465.60

1819 Hydro Operator – Helms

	2005	Proposed 2005
Start	1473.25	1517.45
6 months	1494.05	1538.90
Rate	1529.65	1575.55

Attachment 3

Training for Hydro OIT's will be held in San Ramon. The OIT class hours at San Ramon will be 0700 to 1600 hours to be adjusted as needed to allow maximum use of the simulator and the training facilities.

Journeyman Hydro Operator vacancies will be filled as outlined in Section 2(s) of the attached Hydro Operator-in-Training Guidelines. HOIT employees will attain 205.7(b) bidding status to the Hydro Operator classification upon attainment of Wage Step 3.

Unassigned Journeyman and HOIT's who have entered Wage Step 3 in this program may be required to move beyond a commutable distance to fill Journeyman vacancies. If required to move beyond commutable distance as defined in Section 206.8 of the Agreement, s/he shall be entitled to moving expense payments as provided for in Section 206.8 of the Agreement. If moving expenses for any regular assignment as specified above are paid by Company, the operator shall not be considered a qualified bidder in accordance with Title 205 of the Agreement for a period of 18 months from the date of placement. If such employee provides for his/her own moving expenses, the employee will be able to bid upon reporting to the new headquarters.

Attached hereto are the Hydro Operator-in-Training Guidelines applicable to this program.

Guidelines for Hydro Operator-In-Training Program

1. BACKGROUND

a. Objective of the HOIT Program

The need for trained and fully qualified employees to accomplish the duties specified in the Hydro Operator definition in a manner consistent with the General Operating Procedures and Code of Safe Practices, has resulted in this program which coordinates extensive academic training and skill demonstration. The systematic acquisition of knowledge and skill offers the Hydro Operator In Training (HOIT) the vehicle to attain self-confidence and satisfaction in his/her work and the correct and safe method of performing company work.

b. HOIT Program Philosophy

The following philosophy has been applied in developing this program:

- Learning and wage progression are the student's responsibility.
 - The student must acquire the knowledge and demonstrate proficiency in the skills that are directly applicable to the job and workplace.
 - At least 50% of the student's study time will be devoted to practicing skills.
 - Most of the student's practice will take place at a Hydro field location.
 - The student will learn at his/her own pace, provided s/he demonstrates timely progress, i.e. complete wage progression tests within normal time periods.
 - A journeyman operator, his/her supervisor and a course manager will aid the student.
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c. Focus on "Need To Know"

The training is designed in a modularized program to teach the skills needed to perform the tasks that are required of a Hydro Operator. It is based on an extensive analysis of the Hydro Operators' duties that was done by the journeyman operators themselves. The content of the lesson modules (88) and field practices (12) are based completely on the material the journeyman operators identified as crucial to their success.

2. PROGRAM STRUCTURE

a. Introduction

The HOIT program recognizes that trainees need to acquire a significant common core of skills and knowledge in transmission, distribution and hydro systems.

The Company-Union Joint Apprenticeship & Training Committee shall govern the training and progression of employees in the HOIT Program.

b. Common Core Training

Common core skills and knowledge includes such things as:

- Safety
 - First Aid
 - Communications
 - Office Skills
 - Electric Theory
 - Power System Components
 - Equipment Limitations
 - Job Planning
 - Trouble Shooting, etc.
-

c. Hours

Initially the trainee may be assigned to a Central Facility to complete the basic modules and Fundamental Courses, and then placed at a Switching Center to further his/her experience. The HOIT will work according to the existing local schedule, until such time the Training Coordinator deems the trainee is ready to benefit from sitting swings or graveyards with journeymen operators. Upon attainment of wage step three, s/he will work a rotating shift along with a journeyman, if not already assigned a rotational shift, according to established protocol. The following also will apply:

- Maintain 40-hour workweek, or average 40 hours per week over a complete rotation per established local schedule.
 - All travel time outside of the 40-hour work schedule required to reach the location of training will be in accordance with the Company/IBEW Local 1245 Agreement.
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d. Plant Fundamentals Course

After completing HY-10 the trainee will be scheduled to attend training at a centralized facility for a one-week class in Plant Fundamentals. The approximate time will be near the 8-week point.

2. PROGRAM STRUCTURE, continued**e. Basic Electricity Course**

Within 16 weeks of the program and after module EF-06, the HOIT will attend a one-week class in basic electricity at the Power System Operations School. An HOIT with a substantial background in electricity may elect to challenge the course final test without attending the class. If the student fails, s/he will be required to take the class and pass the test at the end of the course. Any student who fails the end-of-course test will be given one additional try. If this attempt fails, the HOIT will be removed from the program.

f. Field Assignments

- Assignments during the program will be made for the purpose of rounding out the trainee's experience. The time frame will be from 12 – 52 weeks.
- Except where otherwise specified, HOITs shall be trained by assignment to work with qualified journeymen.
- When performing field assignments (27 – 31 weeks), the trainee will complete a Field Task Checklist. This portion of the program is designed to round out the apprentice's understanding and knowledge of the system s/he will be operating.
- S/he may be assigned to work without direct supervision only after s/he has been instructed and trained on the duties or work procedures. Such assignments shall be for the purpose of developing and demonstrating proficiency. It is not intended that such assignments be made merely to avoid use of a journeyman.
- Except in emergency circumstances, an HOIT shall not be temporarily assigned to the classification Hydro Operator. If so assigned, the HOIT shall not be given the responsibility for duties or work assignments beyond his/her current level of experience

If an HOIT does not maintain an acceptable on-the-job or academic work level, notice shall be given to Union's Business Representative or his designate.

g. Advanced Fundamentals Course

After completing HY-28 the trainee will be scheduled to attend training at a centralized facility for 1 to 2 week period on Advanced Fundamentals. The approximate time will be near 22 weeks in the program.

2. PROGRAM STRUCTURE, continued**h. Simulator Practice**

As the HOIT completes his/her written modules and skill checks, there are simulator practice problems interspersed that will demonstrate the student's proficiency in dealing with key operating principles. To accelerate learning, the trainee will be scheduled to practice and demonstrate operator skills on the San Ramon simulator for 96 hours. The practice will be guided by the following:

- Instructors will coach, instruct and, if necessary, demonstrate the activity expected for demonstration of proficiency.
 - The HOIT will be given the opportunity to practice each skill as much as needed.
 - The HOIT may be assigned work occasionally in a team with other HOITs in the simulator to reinforce learning.
 - An advanced HOIT may be asked to demonstrate proper procedures to a newer HOIT.
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i. Advanced Operating Review Course

The HOIT will attend a one-week Operating Class that is designed to prepare the trainee to take the qualifying On-The-Job-Training (OJT) Modules. This class incorporates all the basic skills, such as: Print Reading, troubleshooting, water management, relay protection, and switch writing.

j. Records

- It shall be the responsibility of each trainee to maintain his/her own records in collaboration with the immediate supervisor. Upon completion of each module the supervisor will input the necessary information into training server.
- It shall be the responsibility of the Program Coordinator to keep the necessary files of records on each HOIT and to ascertain that each HOIT has a reasonable opportunity of meeting the criteria set forth in this guideline.

Such records shall at all times be available during the training period for review by interested supervisors, the student and, upon request, by representatives of the Union.

k. Testing

A grade of 70% shall be considered as passing for all written tests in the program.

The following parameters will be used to determine a trainee's failure of a simulator wage progression test:

- Incorrect handling and documentation of any activity designated as critical.
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2. PROGRAM STRUCTURE, continued

- k. Testing, continued**
- Three or more instances of incorrect handling and documentation of activities designated as required.
 - Failure to complete a SWPT within 9 hours.
 - Use of improper reference materials.
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l. Wage Progression To enter the program the employee must meet requirements:

- Pass the initial screening test for HOIT
- Pass the Arithmetic Computation Test (ACT). New hires must pass the ACT before reaching 6 months service (FF 634-77-231).
- Possess a Class 3 Drivers License.

In wage step one, the employee must:

- Complete 88 modules and 12 field practices (see course map).
- Complete Plant Fundamentals Class.
- Successfully pass the Basic Electricity final test.
- Complete Advanced Fundamentals Class.
- Pass the Simulator and written Wage Progression Test (WPT).

In wage step two, the employee must:

- Complete Field Task List
- Complete Advanced Operating Review Class
- Successfully pass the first 10 Job Performance Measures.

In wage step three, the HOIT may attain Journeyman status and all journeyman employees must:

- Successfully pass the second 10 OJT Training Modules.
-

m. Time Frame

This program is designed to be self-paced. However, each HOIT is expected to progress as follows:

- Wage Step Two entered by the end of 6 month of training.
- Wage Step Three entered by the end of 12 month training.
- Unassigned Status by the end of 16 month of training.

Due to abilities possessed at the time of program entry, a student may advance more rapidly so long as all academic and demonstration skills are completed.

2. PROGRAM STRUCTURE, continued**n. Failure to Meet Standards**

An employee who is due to progress to the next higher wage step but fails to meet the standard of achievement or fails the WPT shall:

Be notified of the inadequate performance in writing prior to the date the employee is scheduled to receive the next higher wage step. A copy of the written notification shall be furnished to the Union's Business Representative.

- Be allowed a maximum of 30 days, including one retest, to meet the established standards for Basic Electricity. If the HOIT is granted the opportunity by agreement of his or her supervisor and the manager of the school to challenge the test without first attending the class and fails the challenge, attendance in the next Basic Electricity class is mandatory. If the HOIT fails the test after the class, s/he has 30 days, including one more retest, to meet the basic standards.
- Be allowed a maximum of 30 days, including one retest, to meet the established standards for the wage step that the employee is attempting to attain. Such 30-day period shall commence the day the original WPT failure occurs.
- If during such 30-day period, the employee meets the established standards, the employee shall receive the next higher wage step effective the date such standards were met. During this 30-day period, the employee's training will continue as scheduled.

If an employee does not complete all required training modules in the time allowed for that wage step, that employee is not eligible to take the wage progression test in that wage step. Such employee shall be given 30 days to complete the required training modules and become eligible for the wage progression test.

o. Removal From Training Program

If an employee who is attempting to meet the standards established to progress in the allotted time fails, the employee shall be removed from the classification. The employee may fill a vacancy if one exists provided such employee has the necessary qualifications to move forward in the classification. If the employee cannot exercise one of the above options, the employee shall be terminated.

When an HOIT fails the HOIT Program, the employee's bid will not be considered to an apprentice classification that the employee had not held prior to being an HOIT for a period of one year after demotion.

2. PROGRAM STRUCTURE, continued**p. Return to HOIT Program**

An employee within one year of demotion from the Operator Training Program shall have his/her application for transfer to a vacancy in the appropriate Operator Training Program considered under the provisions of Title 205 upon the presentation of acceptable evidence that he or she has remedied the deficiencies which caused his/her demotion or, if such demotion was due to academic failure, that an employee has pursued an outside study program and completed the required tests to meet the established standards of the wage step the employee left.

An employee who transferred out of the HOIT Program or an employee demoted for reasons other than failure to meet the standards shall be restored to the training program at the wage step the employee left if the employee returns to the training program within one year.

q. Progression to Unassigned Journeyman Status

An Operator in Training who has successfully met all requirements in the Operator Training Program shall, effective on the day an employee meets such standards, be progressed to:

- a. Unassigned Journeyman Operator. Such an Unassigned Journeyman Operator may be rotated on a pre-determined schedule through the four standard operating shifts at a temporary headquarters to be determined by the Company. Assignment to any rotation shall be for a minimum of 28 consecutive days. During this assignment he or she may be required to assume all the duties of a Hydro Operator as described in the job definition.
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r. Progression to Unassigned Journeyman Relief Status

- b. Unassigned Journeyman Relief Operator. At a temporary headquarters, the Unassigned Operator may assume the duties of a Relief Operator until such time as an employee is appointed to a regular position. Assignment of an Unassigned Journeyman to relief status under this option shall only be made after existing assigned non-Relief Operators at the location are given an opportunity in Service order to assume relief status pursuant to the provisions of Section G of the Utilization of Relief Shift Employees, Title 202, 205, and 208, dated November 1, 1967. If an Assigned Operator assumes relief status under this option, the Unassigned Operator shall assume the schedule and rate of pay of the Assigned Operator who assumes relief status. Such assignments shall continue until the Unassigned Journeyman Operator is assigned a regular position.
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2. PROGRAM STRUCTURE, continued**s. Filling
Journeyman
Vacancies**

1. A regular Hydro job vacancy which is to be filled in a Journeyman Operator classification shall be filled by pre-bid in the normal application of Subsection 205.7(a) or (b). However, employees who entered this program by transfer will be considered before other pre-bidders from this program in the administration of Subsection 205.7(b) for positions in their respective geographic Areas.
2. If the job vacancy is not filled under the above paragraph, Company shall assign the Unassigned Journeyman or the OIT who has attained Wage Step 3 with the greatest service in the Area (Northern, Central, or Southern) where the vacancy exists to the job vacancy.
3. If the job vacancy is not filled under the above paragraphs 1 or 2, the Unassigned Journeyman Operator or the OIT who has attained Wage Step 3 who has received training at the location and who has the least service shall be assigned to the job vacancy.
4. If the job vacancy is not filled under the above paragraphs 1, 2, or 3, Company shall attempt to fill the job vacancy by volunteer with the greatest service among the Unassigned Journeyman Operators or OIT's who have attained Wage Step 3 headquartered temporarily in San Ramon. If there are no volunteers, Company shall assign the Unassigned Journeyman Operator or OIT who has attained Wage Step 3 among those at San Ramon with the least service to the job vacancy.

In applying paragraphs 2, 3 and 4 above, if the assignment requires the employee to move beyond a commutable distance as defined in Section 206.8 of the Agreement, s/he shall be entitled to moving expense payments as provided for in Section 206.8 and the Labor Agreement Interpretation relating to moving expenses.

5. If the job vacancy is not filled under the above paragraphs 1, 2, 3, or 4 Company shall fill it in accordance with Subsection 205.7c.
 6. When a System Operator transfers to another headquarters and is not capable of assuming shift after a reasonable time period, prior to the application of Section 206.15 of the Physical Agreement, his/her status shall be referred to a subcommittee consisting of one Company and one Union member of the Joint Apprenticeship and Training Committee. Action of this subcommittee shall be limited to the determination of an extension of time that is to be allowed to complete the orientation. It is understood that situations may occur where no additional time is warranted for the transferred employee's orientation.
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2. PROGRAM STRUCTURE, continued

- t. Temporary Assignments** An Unassigned Journeyman Operator may be temporarily assigned to any attended location within his/her bidding unit under the provisions of Title 201, 202, 205, 208 and the Labor Agreement, "Clarification of Utilization of Relief Shift Employees." The temporary assignment applies only to vacancies that will extend for 28 days or more and no Unassigned Operators are available at that location.
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- u. Journeyman Bids and Transfer Requests** A transfer request or a bid made by a journeyman to fill a job vacancy in an Operator In Training or an Assistant Operator classification shall not receive consideration under the provisions of Subsection 205.5(d)(1) or (2).
-
- v. General**
1. Should a grievance arise concerning the administration of any portion of this agreement, it shall be determined by the procedure established under the provisions of Subsections 102.3(a)(2) and 102.6(3)(b) of the Agreement; however,
 2. If the grievance pertains to:
 - a) the fairness of administration or correction of a test required in the program or
 - b) the attainment of a standard or proficiency which does not require a test as such, the Local Investigating Committee, prior to its decision and as part of its deliberations, may refer such grievance to the Joint Apprentice Training Committee for its recommendations, pursuant to Section 109.2.
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3. STEP REQUIREMENTS – FIRST STEP (1 – 8 weeks)

- Overview** During the first eight weeks, the trainee attends a one day safety/hydro orientation, completes 22 training modules.
- Step 1 Map** Step 1 course map displays the various paths and sequence for completing the step modules.
- Centralized Training** After completing module HY-10 the trainee will be scheduled to attend training at a centralized facility on Plant Fundamentals.

Step 1 Modules

Module Number	Module Title
WP-01	APR Section 1
WP-02	APR Section 2
WP-03	APR Section 8
WP-04	APR Section 3
WP-41	Procedures for Accidents and Injuries
WP-11	Use 24 Hour Clock
WP-21	Use Company Telephone
WP-12	Operate Office Equipment
WP-23	Using the Pager
WP-22	Use Company Radio
WP-13	Use Approved Abbreviations
WP-14	Make Entries in Chronological Log
WP-15	Maintain Switching Center Records
HY-02	Hydro Characteristics
HY-03	The Power System
HY-05	Power Dispatch
HY-04	Transmission and Distribution
HY-06	Power System Operation
HY-07	Power From Water
HY-08	Major Components and Systems
HY-09	Hydraulic Principles
HY-10	Hydrology

3. STEP REQUIREMENTS – SECOND STEP (9 – 16 weeks)

Overview During the second eight weeks, the trainee learns and performs skill checks for thirty modules and six field practices.

Step 2 Map Step 2 course map displays the various paths and sequence for completing the step modules.

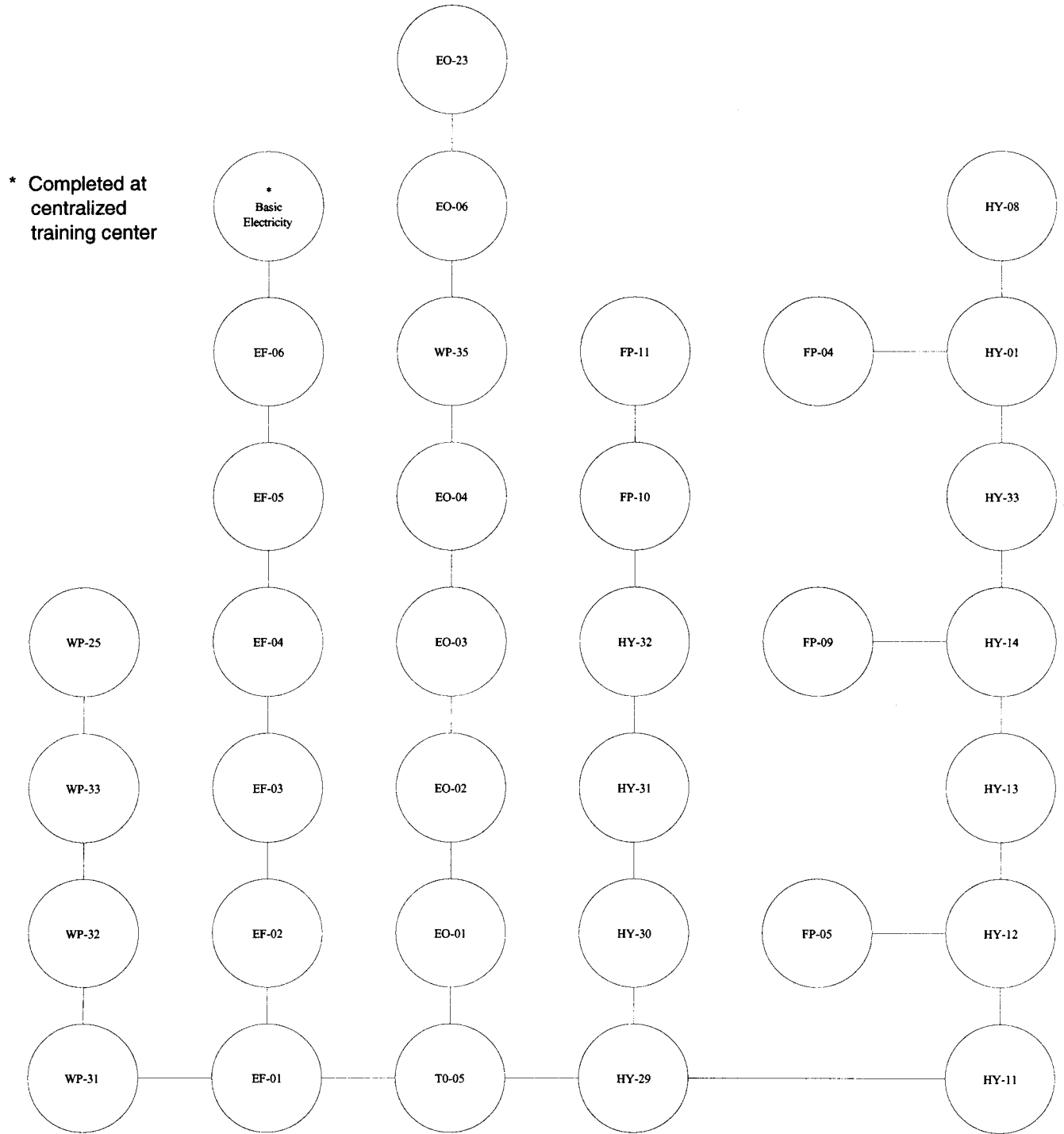
Centralized Training After completing module EF-06 the trainee will be scheduled to attend a centralized facility for Basic Electricity.

Step 2 Modules

Module Number	Module Title
WP-31	Complete and Place Tags (MOL, Non-Test, Caution)
WP-32	Read Maximum Demand Meters
WP-33	Field and Station Switching Tools
WP-25	Operate Field and Substation Equipment via SCADA
EF-01	Basic Electricity
EF-02	Magnetism
EF-03	Electrical Circuits
EF-04	AC Circuits
EF-05	AC Generators and Motors
EF-06	Transformers
TO-05	Transmission Operating Diagram
EO-01	Introduction to a Power System
EO-02	Equipment Numbering
EO-03	Single Line Diagrams
EO-04	Single Line Meter and Relay Diagram
WP-35	Transfer Station Power
EO-06	Substation Bus Configuration
EO-23	Read and Interpret Substation Weekly Read Sheets
HY-29	Valves
HY-30	Auxiliary Equipment
HY-31	Powerhouse Water Systems
HY-32	Auxiliary Systems
HY-11	Construction of Dams
HY-12	Headwork Spillways
HY-13	Intake Structures
HY-14	Reservoir Control
HY-33	Outdoor Operation
HY-01	Calculating Water
FP-10	Locate Valves
FP-11	Read Station Batteries & Place On & Off Equalize Charge
FP-05	Operate Spill Gates
FP-09	Respond to Trash Rack Differential
FP-04	Complete a Draft Change
FP-08	Complete Weather Readings

3. STEP REQUIREMENTS – SECOND STEP (9 – 16 weeks), continued

Step Map 2



3. STEP REQUIREMENTS – THIRD STEP (17 – 26 weeks)

- Overview** During the third step, the trainee learns and performs skill checks for 36 modules and 6 field practices.
- Step 2 Map** Step 3-course map displays the various paths and sequence for completing the step modules.
- Centralized Training** During this time the trainee will be scheduled to attend centralized training. The trainee will attend Advanced Plant Fundamentals after completing module HY-28 and Hydro Simulator Practice after TO-26. Included in the training will be their 6 month simulation and written wage progression test.

Step 3 Modules

Module Number	Module Title
HY-15	Pelton Turbines
HY-16	Reaction Turbines (Kaplin type)
HY-17	Reaction Turbines
HY-18	Turbine Operating Characteristics
HY-19	Hydraulic Actuators
HY-20	Governor Control
HY-21	Turbine Monitoring & Protection
HY-22	Generator Construction 1
HY-23	Generator Construction 2
HY-24	Generator Fundamentals
HY-25	Excitation System and Synchronizing
HY-26	Control of Active and Reactive Power
HY-27	Monitoring Generator Operation
HY-28	Generator Electrical Protection
TO-11	Fundamentals of System Protection
TO-01A	Operating Transmission Circuit Breakers
TO-01	Operating Transmission Sectionalizing Equipment
DS-11	Understanding Switchboard Components
TO-12	Fundamentals of Automatics
TO-02	Operating Transmission Protective Relays - Independent
TO-03	Understanding Transmission Line Protection - Pilot Line
TO-13	Schweitzer Relays
TO-14	MDAR Relays
TO-15	OCM on Protective Relays
DF-07	Isolate Circuits and Equipment
EO-11	Complete Applications
EO-12	Clearance Applications
TO-22A	Write Switching to Clear/Restore a Transmission CB
TO-22B	Check Switching to Clear/Restore a Transmission CB
TO-21	Clearing a Transmission Line
TO-22	Check Switching to Clear a Transmission Line
TO-07	Transmission Protection Accessories
EO-16	Relay Work Application
DS-12	Transformer Bank Protection
DS-13	Operating Transformer Banks
TO-26	Check Switching for a Transmission Bank

3. STEP REQUIREMENTS – FOURTH STEP (27 – 31 weeks)

Overview The trainee will rotate to other watersheds to gain operating experience. During this rotation a Field Task list will be completed on activities performed. Also during this time a field trip will be set up to visit the TOC and EPOS to gain an understanding of their business interaction and process.

Field Task List

- Water Management – Perform system orientation
- Water Calculations – Perform various scenarios
- Prints – Identify unit clearance points Hydro and Electric
- System Electrical – Rack-in, Rack-out, and placing breakers in Test position
- Powerhouse Generators, Turbines, Exciters – Operate, maintain, and inspect
- Unit Startup – Demonstrate or perform
- Unit Shutdown – Demonstrate or perform
- Spill Gates – Operate in Manual and using SCADA
- Sluice Gates – Operate in Manual and using SCADA
- Reservoir/Dams – Orientate and inspect
- Canals/Flumes/Ditches – Orientate and discuss operation
- River – Regulate flow
- Pressurized/Unpressurized Tunnels – Regulate flow
- Penstock – Orientate, inspect, maintain, and regulate flow
- Auto Tests – Become familiar with weekly, monthly, quarterly, semi-annual, and annual tests
- EAP – Conduct tests
- Trash Racks – Inspect, operate, and clean
- Substation – Conduct visual inspection and record readings

3. STEP REQUIREMENTS – FIFTH STEP (32 – 52 weeks)

Overview Basic review of system parameters as a whole. This is where the trainee practices and is measured on job performance.

Centralized Training A one week Advanced Operating Review Class will be scheduled at a centralized facility.

Final Exam Part 1 The trainee needs to successfully complete 10 of 20 Job Performance Measures (JPM) Modules for the facility s/he is attending.

3. STEP REQUIREMENTS – SIXTH STEP (53 – 68 weeks)

Overview Once the employee obtains a regular assignment and becomes familiar with the job equipment and operations, s/he at that point will complete the final exam.

Final Exam Part 2 Successfully complete the final 10 JPMs for that position s/he is filling.