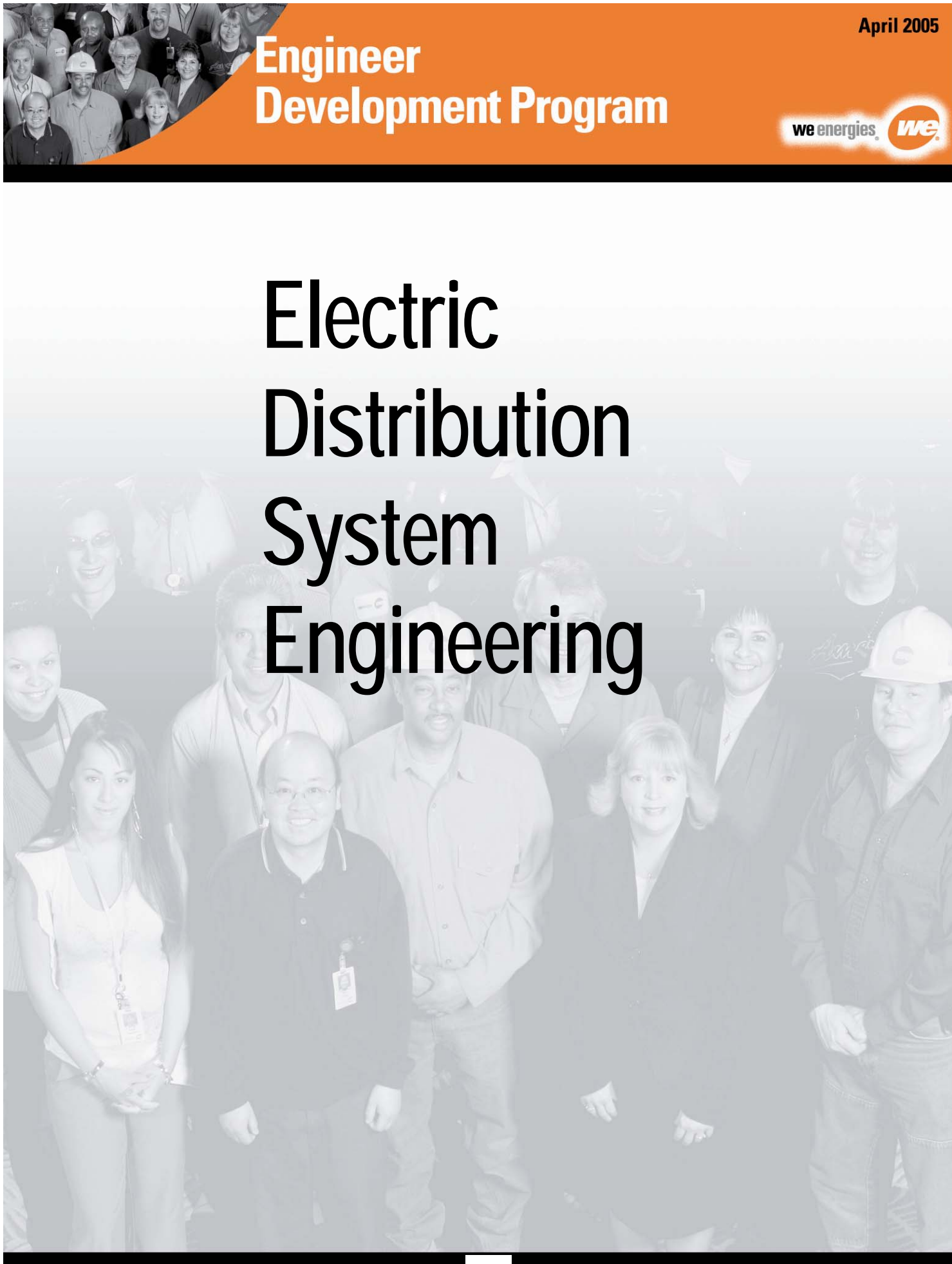


April 2005

Engineer Development Program



Electric Distribution System Engineering



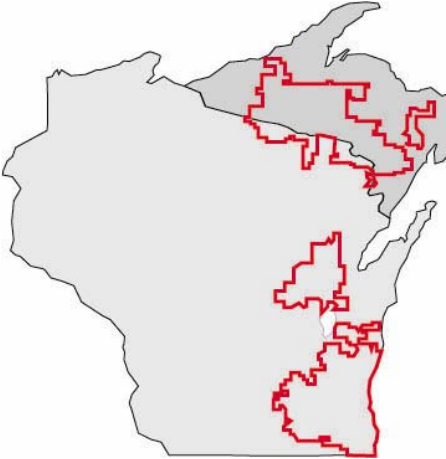
Introduction

We Energies, a utility subsidiary of Wisconsin Energy Corp., provides electricity, natural gas and steam service to approximately 2.4 million people in Wisconsin and portions of Michigan's Upper Peninsula.

We Energies offers challenging work, attractive benefits, competitive compensation and extensive services to help meet your personal and professional objectives. Our company success hinges upon our employees who build on our traditions of innovation and superior customer service. We strive for stability in our work force to help focus on excellence in our day-to-day operations.

The many talents, perspectives, experiences and backgrounds that our employees bring to their jobs reflect the diversity found in our organization. We value a work force diverse in gender, race, culture and age. Making diversity and cross-cultural sensitivity a corporate priority has resulted in a strong, team-oriented work force that values creativity and allows all employees to reach their full potential.

We train and develop our new engineers to become an integral part of our business. This document provides an overview of our Engineer Development Program for Electric Distribution Operations.



Electric System Key Facts

We Energies' electric system includes generation and distribution for urban and rural areas in southeastern Wisconsin, the Fox Valley and Upper Peninsula of Michigan.

- **Electric service customers:** 1,026,000
- **Service area:** 12,600 square miles
- **Generating capability:** 5,900 megawatts
- **Peak demand:** 6,300 megawatts
- **Voltages:** 4 to 34.5 kilovolts
- **Primary power lines:** 28,000 miles
- **Secondary/service power lines:** 24,000 miles
- **Employees:** 6,000

New Engineer Development Program

Overview

One goal of the New Engineer Development Program is to provide new college graduate engineers a broad view of the business of the company. This is accomplished through a development and rotational assignment training program consisting of six-month rotational orientation assignments in four of the following six areas:

- Area Field Engineering
- Substation Engineering
- Materials and Applications Support
- Distribution Automation
- Electric System Metering
- Distribution Dispatch

Manager

An engineering manager is responsible for ensuring that the new engineer has every opportunity to fully develop as a contributing professional at We Energies. The manager reviews the new engineer's assignments and performance plans to ensure that they are meaningful and productive. The manager also provides input to performance reviews to ensure consistency and progress. However, the manager does not replace line management in the areas of promotion, performance evaluation, salary administration, etc.

Supervisor

The supervisor plays an important role in an engineer's development. While the New Engineer Development Program provides a structure for a broader company perspective, it continues to be the supervisor's responsibility to impart the technical skills and work ethic the employee needs to be successful. Rotational assignments within the program are intended to represent productive work to benefit the company. The supervisor's challenge is to formulate projects in this light and set milestones for the new engineer's growth.

Engineering Skills Development

The following information outlines *technical development* for engineers in Distribution Systems Engineering. In addition to technical development, employees must meet expectations for performance competencies and work experience as well as develop client management and consulting abilities to be considered for promotional opportunities.

A. A series of four, six-month rotational orientation assignments selected from the following six areas. (Assignments will be available for students in the Engineering Co-op Program as well as newly graduated engineers.)

Assignments will be in the following areas:

1. **Area Field Engineering Team assignment, providing exposure to:**
 - Distribution line design/construction order generation
 - Area planning (including exposure to Planning Support)
 - Distribution protection issues (including exposure to central Protection Support)
 - Field application issues
 - Field construction

- Area business operations
2. **Substation Engineering group assignment, providing exposure to:**
 - Substation engineering
 - Project licensing
 - Project management processes and tools
 3. **Materials and Applications Support assignment, providing exposure to:**
 - Materials and equipment standards
 - Voltage regulation issues
 - Power quality issues
 - Stray voltage/EMF issues
 4. **Distribution Automation group assignment, providing exposure to:**
 - Distribution management systems
 - Energy management systems/SCADA
 - Demand side management systems
 - Substation automation/Integrated distribution automation
 5. **Electric System Metering group assignment, providing exposure to:**
 - Electromechanical and solid state measurement methods
 - Application of new metering devices
 - Meter programming and diagnostic software
 - Remote and automatic meter reading systems
 - Substation and inter-tie metering issues
 6. **Distribution Dispatch**
 - Electric distribution operating equipment and procedures
 - Field switching practices
 - Distribution information and control systems
 - Outage management process
 7. **Other possible assignments: Power Generation**
 - We Power
 - Fossil Operations
- B. Two sequential assignments each of approximately two to three years duration in any of the following eight specialty areas:
- Area Planning
 - Planning Development
 - Distribution Protection
 - Substation Engineering
 - Materials & Equipment Evaluation/Specifications
 - Field Applications
 - Distribution Automation
 - Electric System Metering
- C. The Experienced Engineer Career Development Program is a customized program based on individual backgrounds, interests, etc., for engineers with seven or more years of engineering work

experience. Potential developmental assignments (would not require formal management announcement process) in any of the eight areas under Item B plus:

- Startup Engineering
- Substation Automation
- Distribution Dispatch

Engineering Jobs

The following describes engineering positions at the fully qualified level. Employees with varying levels of technical expertise and experience may fill the positions. In addition to the technical development, employees must meet expectations for performance competencies and work experience as well as develop client management and consulting abilities to be considered for promotional opportunities.

Associate Engineer

Supervisor screens assignments for unusual or difficult problems and selects techniques and procedures to be applied on non-routine work; receives close supervision on new aspects of assignments.

Uses prescribed methods, performs specific and limited portions of a broader assignment of an experienced engineer; performs routine engineering work requiring application of standard techniques, procedures and criteria in carrying out a sequence of related engineering tasks.

Minimum Requirement: B.S. in engineering required.

Engineer

Receives technical guidance on unusual or complex problems and supervisory approval on proposed plans for projects; independently performs most assignments with instructions as to the general results expected.

Plans and conducts work requiring judgment in the independent evaluation, selection and substantial adaptation and modification of standard techniques, procedures and criteria; devises new approaches to problems encountered.

Provides work direction to a few engineers or other staff on assigned work.

Minimum Requirement: Two to seven years engineering experience.

Senior Engineer

Supervision and guidance relate largely to overall objectives, critical issues, new concepts and policy matters; consults with supervisor concerning unusual problems and developments.

Applies sound and diversified knowledge of engineering principles and practices in broad areas of assignments and related fields; makes decisions independently on engineering problems and methods; requires use of advanced techniques and modification and extension of theories, precepts and practices of his/her field.

Typical duties and responsibilities include one or more of the following: (1) provides work direction, coordinates and reviews the work of engineers or other staff; (2) as individual researcher or staff

specialist, carries out complex or novel assignments requiring the development of new or improved techniques and procedures.

Minimum Requirement: Seven to 10 years engineering experience

Principal Engineer

Supervision received is essentially administrative, with assignments given in broad general objectives and limits.

Responsibility for interpreting, organizing, executing and coordinating assignments; plans and develops engineering projects concerned with unique or controversial problems that have an important effect on major company programs; involves subject area exploration, definition of scope and selection of problems for investigation and development of novel concepts and approaches.

As individual researcher, consultant or staff specialist conceives plans and conducts research in problem areas of considerable scope and complexity. May additionally plan, organize and/or supervise work of small group of engineers and/or other staff, including performance management planning.

Maintains liaison with individuals and units within or outside his/her organization with responsibility for acting independently on technical matters pertaining to is/her field.

Minimum Requirement: 10 to 15 years experience required, P.E. registration.

Licensed Professional Engineer may be a requirement for certain positions/disciplines, i.e., Wisconsin Administrative Code requirement, provide "expert" testimony at Public Service Commission hearings, etc.

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Additional career opportunities, listed below, require formal management announcement of a job opening and subsequent selection and placement of the successful candidate into one of the following jobs:

Major Project Manager

The primary responsibility of the project manager is to manage substation capital improvement projects via: scoping, estimating engineering, design, support of construction management and job close-out; providing feedback on budget and other performance goals; ensuring on-time and on-budget improvement and expansion projects; hiring, monitoring and consistently evaluating in-house construction or external construction work forces.

Additionally, the project manager coordinates outage planning with system operations; ensures successful start-up and commissioning of projects; provides recordkeeping and ongoing system monitoring in support of operations, maintenance and future planning; and provides benchmarking information on engineering and construction services.

Minimum Requirement: Seven to 10 years experience in a leadership role in engineering or construction required; engineering degree, P.E. registration.

Supervising Engineer

Supervision received is essentially administrative, with assignments given in broad general objectives and limits.

Responsibility for interpreting, organizing, executing and coordinating assignments; plans and develops engineering projects concerned with unique or controversial problems which have an important effect on major company programs; involves exploration of subject area, definition of scope and selection of problems for investigation and development of novel concepts and approaches.

Plans, organizes and supervises the work of a staff of engineers and/or other staff. Responsible for performance management planning.

Maintains liaison with individuals and units within or outside his/her organization with responsibility for acting independently on technical matters pertaining to his/her field.

Minimum Requirement: 10-15 years experience required, P.E. registration.

Promotion Opportunities

Promotions Within Engineering Job Family

Engineering Job Family is defined as associate engineer, engineer and senior engineer.

Associate Engineer to Engineer

- Associate engineers' performance reviewed every six months
- Promotion to engineer when employee:
 - Completes two years as an associate engineer
 - Demonstrates the skills of a fully qualified associate engineer
 - Recommended for promotion by supervision

Engineer to Senior Engineer

- Engineers' performance reviewed annually
- Promotion to senior engineer when employee:
 - Completes seven to 10 years of engineering experience
 - Demonstrates the skills of a fully qualified engineer
 - Recommended for promotion by supervision

Promotions Outside Engineering Job Family

Potential promotional opportunities require formal management announcement process, e.g. application, testing, interviewing. Candidate must possess a bachelor's degree in engineering or other technical degree, or related experience and registration as a P.E. plus the indicated minimum number of years of experience and additional requirements as indicated.

- **Major project manager** (minimum of seven to 10 years experience in a leadership role in engineering or construction required)
- **Supervising engineer** (minimum of 10 to 15 years experience required)
- **Principal engineer** (minimum of 10 to 15 years experience required)

Continuing Education

Continuing education for engineering personnel is important because technology changes are rapidly occurring in the utility industry. Work related training is encouraged for engineering personnel.

Sources of continuing education include:

Associate Engineering Seminars

Periodic meetings to discuss technical topics of concern to associate engineers. The meetings increase the associate engineer's basic knowledge and understanding of power systems.

We Energies Engineering Seminars

Periodic presentations for all distribution engineers. These seminars are developed and presented by in-house engineering personnel. A sample of seminar topics includes:

- Electric metering technology
- Distribution systems automation
- Power quality
- Distribution system reliability
- Substation design
- Communications technology for distribution systems
- Distribution system planning
- Distribution system protection
- Insulation coordination for power systems

External Seminars and Conferences

Opportunities exist to participate in seminars or conferences sponsored by external parties.

Attendance at these seminars or conferences may allow for opportunity to travel. Subject matter may include:

- Technical training from equipment manufacturers
- Technical training for advanced engineering concepts
- Project management
- Performance competencies (communications, teamwork, etc.)

Tuition Reimbursement Program

We Energies Tuition Reimbursement Program enables engineering personnel to continue their education at accredited colleges. This program offers a graduated reimbursement scale based on grade received and applicability.

- **Company related courses or degree courses**

Grade Awarded	Reimbursement
A or B	90%
C or Pass	80%
Below a C	0%
- **Self Enrichment** – Reimbursed at 60% if A, B, C or Pass

Professional Engineer Registration

Cost Reimbursement

1. Reasonable absences from basic scheduled work for purpose of obtaining Professional Engineer registration is permitted without wage deductions.
2. Employees are reimbursed for fees associated with obtaining either Fundamentals of Engineering or Professional Engineer registration, including "repeats" if exam is not passed initially. Registration renewal cost is employee's obligation.
3. Necessary mileage/travel expense related to obtaining registration is reimbursed in normal manner.
4. Reasonable lodging expense is reimbursed in situations where it is found necessary to travel a long distance for exam. Reasonable meal expense associated with such lodging expense also is reimbursed.
5. Costs related to "refresher courses" preparatory to taking registration exam are not covered under above. (Cost of "refresher course" itself, however, is covered under company's Tuition Refund Program.)
6. All costs associated with registration and license renewal in additional states, if required by company are reimbursed.

Recognition of Professional Engineer Status

1. When a person completes four years as an engineer AND
Receives PE Registration AND
Is recommended by supervision,
The engineer may receive a base wage increase of up to \$100 per month.
Recognition increase will not change anniversary date for base wage adjustments.
2. Engineers are expected to maintain a valid PE registration.

Professional Organization Memberships

1. Costs associated with membership in professional organizations (IEEE, IAEI, IES, etc.) are employee's responsibility unless company requires membership. Electric distribution system engineers are eligible for reimbursement of 70 percent of annual membership for IEEE Power Engineering Society membership.
2. Mileage and reasonable meal expenses related to attending periodic local meetings for professional organizations of which an employee is a member are reimbursed in normal manner.