Engineer Development Program

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we energies

Fossil Operations

Introduction

The Engineer Development Program provides college graduate engineers with a broad view of the company through opportunities in various power plants, engineering facilities and power system control area.

The supervisor plays an important role in the engineer's professional development. While the Engineer Development Program provides structure for a broad understanding of the occupation, the supervisor has responsibility for providing opportunities to develop the technical skills and work ethic needed for the engineer's success. The supervisor's challenge is to formulate projects in this light and set milestones for the engineer's growth.

At the beginning of employment, the supervisor and the engineer discuss courses to attend and areas with which to become familiar. An annual training plan is developed for the engineer detailing the in-house courses and outside seminars that he/she will attend during the plan year.

Professional Mentoring

In addition to the supervisor, the engineer will be assigned a mentor. The Mentoring Program provides employees with an additional tool to help achieve success and accelerate their becoming part of Fossil Operations. The mentor's role is to answer questions and give advice about job performance and training expectations. The program also looks at ways to further develop the participant's leadership potential.

Although the supervisor and mentor have specific responsibilities within the program, the engineer has responsibility to progress through the development program as opportunities permit.

Engineering Rotation

The Fossil Operations Business Unit comprises many teams working together to safely and efficiently generate low-cost electricity with minimal impact on the environment. The rotation program gives the new engineer opportunity to work within different groups. Each group has its own responsibilities and skill sets. Working within a group allows the new engineer to understand the different responsibilities and gives the new engineer the chance to develop new skills.

Engineering Skills Development

Over the first five years, new engineers receive numerous classes in safety, environmental requirements, project management, budgeting, software applications, and technical and interpersonal skills:

Engineering Safety (Year 1-5)

- OSHA required classes
- Corporate required classes

Environmental (Year 1)

- Power Plant Environmental Limits
- Chemical Hazard Evaluation System
- Chemical Approval Process
- Asbestos Removal Requirements

- Lead Abatement
- Hazardous Materials Management

Codes and Standards (Year 1-5)
- ASME (American Society of Mechanical Engineers) Boiler and Pressure Vessel Code
- ASME B31.1 Power Piping Code
- OSHA (Occupational Safety and Health Administration)
- Wisconsin Administrative Code
- National Electric Code
- NFPA (National Fire Protection Administration)
- WE-WG Electrical Standards

Fossil Plant Competencies (Year 1-5)
- Power Plant Cycle
- Power Plant Equipment
- Power Production (Turbines and Generators)
- Plant Utilities
- Steam Generation
- Gas Turbines
- Plant Heat Rate/Performance

Engineering Skills Development

Project Management
- Plant Drawing Systems
- Project Approval Process
- Project Estimation
- Team Building
- Meeting Management
- Time Management
- Conflict Resolution

Miscellaneous Classes
- Budget Development
- Non-Destructive Testing
- Predictive Maintenance
- Root Cause Failure Analysis
- Writing and Communication Skills
- Plant Insurance Requirements

Computer Software
- Microsoft Office
- Company E-mail System
- Company Forms and Databases
- Specialty Engineering Software

Engineering Jobs

The following describes positions at the fully qualified level. Employees with varying levels of technical expertise and experience may fill these positions. Registration as a Professional Engineer may be required for certain positions.

Associate Engineer

- Performs routine engineering work requiring application of standard techniques, procedures and criteria in carrying out a sequence of related engineering tasks.
- 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 broader assignments of an experienced engineer.

Minimum Requirement: B.S. in engineering.

Engineer

- Plans and conducts work requiring judgment in the independent evaluation, selection, adaptation and modification of standard techniques, procedures and criteria.
- Receives technical guidance on unusual or complex problems and supervisory approval on proposed plans for projects.
- Independently performs most assignments with instructions as to results expected.
- Devises new approaches to solve problems.
- May provide work direction to other engineers or staff.

Typically requires two to three years engineering experience.

Senior Engineer

- 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.
- Supervision and guidance relate largely to overall objectives, critical issues, new concepts and policy matters; consults with supervisor concerning unusual problems and developments.
- Requires use of advanced techniques and modification and extension of theories, precepts and practices of his/her field.
- Provides work direction, coordinates and reviews work of engineers or other staff.
- As an individual researcher or staff specialist, the senior engineer carries out complex or novel assignments requiring development of new or improved techniques and procedures.

Typically requires five to seven years engineering experience.

Principal Engineer

- Plans and develops engineering projects concerned with unique or controversial problems that have an important effect on major company programs.
- Supervision received is essentially administrative, with assignments given in broad general objectives and limits.

- Responsible for interpreting, organizing, executing and coordinating assignments
- Involves subject area exploration, scope and selection definition of problems for investigation and development of novel concepts and approaches.
- As an individual researcher, consultant or staff specialist the principal engineer conceives plans and conducts research in problem areas of considerable scope and complexity.
- May additionally plan, organize and/or supervise work of a 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.

Requires 10-15 years of engineering experience and registration as a Professional Engineer.

The following occupation requires a formal announcement of an opportunity and the subsequent selection and placement of a candidate into the position:

Chief (Supervising) Engineer

- Plans and develops engineering projects concerned with unique or controversial problems that have an important effect on major company programs.
- Supervision received is essentially administrative, with assignments given in broad general objectives and limits.
- Responsible for interpreting, organizing, executing and coordinating assignments.
- Involves subject area exploration, scope and selection definition of problems for investigation and development of novel concepts and approaches.
- Plans, organizes and supervises 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.

Requires 10-15 years of engineering experience and registration as a Professional Engineer.

Continuing Education

Continuing education for engineering personnel is important because of rapid technology changes occurring in the utility industry. Work-related training is encouraged for engineering personnel. Continuing education sources include:

We Energies Engineering Seminars

These are periodic presentations for all Fossil Operations Engineers. The seminars may be developed and presented by in-house engineering personnel. Seminar topics may include:

- Fundamentals of Power Plant Performance
- Fundamentals of Power Plant Control Schemes
- Root Cause Failure Analysis
- Effects of Corrosion and Fluid Flow in Piping Systems

External Seminars and Conferences

Opportunities exist to participate in seminars or conferences sponsored by external parties. These seminars or conferences 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 education at accredited colleges and universities.

Professional Engineer Registration

We Energies values a personal commitment to pursuit and acquisition of Professional Engineer registration.

- Reasonable absences of employees from basic scheduled work for the purpose of obtaining Professional Engineer registration are permitted without deductions from wages.
- Employees are reimbursed for the fee associated with obtaining either Fundamentals of Engineering or Professional Engineer registration.

Recognition of Professional Engineer Status

1 . When an engineer receives PE Registration AND is recommended by supervision, he/she will may receive a base wage increase.

2. Engineers are expected to maintain their PE registration.

Professional and Community Organization Memberships

We Energies encourages employee membership in professional organizations (IEEE, ASME, etc) and active participation in diversity networks, community groups and events. Many are company sponsored.