

**GENERAL DESCRIPTION OF CLASS**

The ENVIRONMENTAL ENGINEER 3 applies extensive advanced environmental engineering knowledge and experience in the areas of engineering project management; technical/professional consultation on the most difficult environmental issues; final plan review and approval of major or complex sources; development of technical strategies, guidelines, rules, and policies; and the evaluation of new and emerging pollution control technology.

**DISTINGUISHING FEATURES**

This is the third level of a three-level series. It is distinguished from the lower levels by the extensive, progressive engineering and environmental knowledge and experience which is applied to a broad range of complex and often unprecedented environmental issues or concerns and require innovative solutions. Employees make decisions having significant public health, economic, or environmental impact. They advise agency management, Economic Development Department staff, and local governments on technical and environmental concerns.

The Environmental Engineer 3 is considered by the Department and by the outside engineering community as an expert in a particular field. These employees are usually assigned project leader responsibility for planning, staffing, reviewing, and completing work assignments. They function as a senior resource and expert within their assigned unit and assist management in developing the technical expertise of other Department engineers and scientific professionals.

**DUTIES AND RESPONSIBILITIES**

Allocation of positions to this class will depend on the total work performed which may include one or a combination of the duties or tasks listed below.

- 1. Technical Consultation/Assistance.** Typical tasks: advises agency management, other state agencies, industry representatives and local governments on the feasibility and potential environmental effects of proposed waste treatment systems or concepts to meet environmental standards for prospective major industries desiring to locate in Oregon and complex pollution control strategies and projects; consults with the public, industrial representatives, and government officials on state programs and requirements concerning pollution control and environmental health and safety; works with other pollution control agencies, industrial associations, universities and colleges to ensure that current and future pollution control needs of the State will be met; responds to public, industry, and media inquiries concerning pollution control and environmental rules and regulations; advises and trains engineers and environmental scientists on technical program issues and procedures.
- 2. Plan Review.** Typical tasks: evaluates engineering plans and specifications for the largest and most complex treatment plants or industrial facilities by performing engineering calculations and applying engineering principles to assure that proposed pollution control systems or equipment provide the most applicable technology; writes detailed plan review reports including recommendations for approval, denial, or modification; analyzes waste monitoring plans for disposal facilities to determine if identification of waste is correct and the level of testing is adequate; reviews contingency, closure, and post closure plans of land disposal facilities to determine conformance to standards and laws and

adequacy of performance; reviews and approves the engineering work of lower-level engineers.

**3. Permit Evaluation and Issuance.** Typical tasks: evaluates major source applications for pollution control permits to determine if State and Federal standards will be met and recommends issuance or denial of permit; calibrates and verifies mathematical models to simulate the impact of complex chemical, biochemical, and physical interactions within the environment to support permit conditions; reviews and approves draft permits of lower-level engineers and specialists for consistency and conformance to agency policy, State and Federal regulation, and sound engineering practices; writes detailed permit review reports recommending issuance or denial of permit; writes permits for major waste facilities and systems.

**4. Special Studies, Reports and Projects.** Typical tasks: coordinates and reviews the work of other engineers and technical specialists on cross-program aspects of large engineering projects; conducts and leads studies of toxic, hazardous, and other waste handling treatment and disposal sites to define environmental pollution problems and evaluate adequacy of methods of control; projects potential impacts on air and water quality through computer modeling and simulation for regional areas of the State for resource management; develops environmental compliance strategies; drafts rules on engineering design standards for pollution control facilities for Commission adoption; develops technical criteria and testing procedures for evaluating the performance of pollution control equipment, processes, and systems, once constructed and placed into operation; researches and writes reports, operating procedures, and guidelines for complex issues and/or for compliance strategies.

**5. Compliance and Inspection.** Typical tasks: conducts inspections and surveillance of the most complex treatment facilities and systems to determine compliance with approved engineering plans, facility permits, and State and Federal environmental standards; reviews analytical data to determine compliance with permit requirements; negotiates compliance schedules and develops programs to bring technically complex and/or politically sensitive sources into compliance; provides impact analysis on emergency spill situations and serves as contact person and initial investigator for emergency chemical spill situations.

## RELATIONSHIPS WITH OTHERS

Employees in this class regularly provide authoritative answers to questions about pollution control technologies and regulations from agency staff, the public, regulated industries and cities, consulting engineers, and other agencies. They establish and maintain regular communications with industry representatives and consulting engineers to exchange information, gain acceptance of requirements, and secure cooperation in solving environmental problems. They occasionally represent the agency to the news media in matters of pollution control technology.

## SUPERVISION RECEIVED

Employees in this class receive general supervision from an environmental manager or division administrator. Most of the engineering work is accomplished without review. Since many problems are unprecedented, the available engineering guidelines are incomplete and must be developed or adapted to the specific circumstances of each assignment. Work assignments may be generated from agency goals and objectives or through requests from within and outside the agency that go directly to the employee. Employees in this class use administrative rules and procedures, State and Federal laws, and Department policies and procedures as guidelines for problem solving and decision making.

**KNOWLEDGE, SKILLS, AND ABILITIES (KSA)**

Extensive knowledge of the theory, principles, and practices of chemical, civil, mechanical, environmental, or other engineering.

Extensive knowledge of air, water, hazardous or solid waste pollution, measurement and/or control principles and practices (specific knowledge requirements will be based on individual positions).

Extensive knowledge of laws, procedures, and regulations governing one or more specific environmental programs.

General knowledge of trends, technological changes, and developments in the environmental engineering profession.

General knowledge of the principles of mathematics, physics, chemistry, hydraulics, thermodynamics, fluid mechanics, statics, and dynamics.

Skill in applying engineering principles to solve environmental problems or complete environmental projects.

Skill in writing clear and concise investigative, technical, or narrative reports.

Skill in applying tact and diplomacy with others to gain cooperation.

Skill in recognizing the significance of environmental data or information and its application to a project.

Skill in analyzing data, evaluating facts, and determining alternative solutions.

Skill in identifying the scope and complexity of an environmental problem, issue, or project.

Skill in communicating orally and in writing with a variety of people, answering questions and explaining information or decisions.

Skill in interpreting and applying information from technical literature.

Ability to design and conduct studies to define environmental problems and recommend solutions.

Ability to develop and apply creative solutions to environmental problems.

Ability to write and present a position paper as a spokesperson for the agency.

Ability to review the work of others to determine accuracy and adequacy of identified conditions, criteria, recommendations, and supporting materials.

Ability to train other in technical program issues and procedures.

Ability to give expert testimony in administrative hearings or court proceedings.

Some positions in this class may require one or more of the following:

Extensive knowledge of the technology of the source or facility being reviewed or analyzed, (e.g., air, water, hazardous waste, or solid waste.)

Skill in using computer modeling to analyze study results.

Ability to work in an environment in which materials may be flammable, corrosive, reactive, toxic, or noxious.

Ability to climb, kneel, stoop, and crouch while performing inspections or taking samples.

Ability to respond to emergency spill situations with recommendations for handling them.

**SPECIAL QUALIFICATIONS**

Some positions in this class may require registration as a professional engineer.

NOTE: The KNOWLEDGE and SKILLS are required for initial consideration. ABILITIES may be required for initial consideration, at any time during the selection process, or during a trial service period as a final stage of the selection process. Some duties performed by positions in this class may require different KSA's. No attempt is made to describe every KSA required for **all** positions in this class. Additional KSA requirements will be explained on the recruiting announcement.

Adopted 1/90

Revised

Examples of work are typical of duties assigned to this class. No attempt is made to describe every duty performed by all positions in this class.