

Job Description for: Engineer I

Jobcode Selection Dt Review Date Job Suffix O/T Class Job Grade

20004049 06/02/2007 03/14/2004 G 2 014

9000 Basic Function

GIVE BRIEF SUMMARY OF THE PRIMARY PURPOSE(S) OF THE JOB.

Initiates or conducts special studies for improving facilities or operation; provides specialized technical service in recognized engineering fields; acts as consultant on complex engineering problems; designs and/or projects; coordinates or directs work of other engineers.

9001 Scope

INDICATE AS APPROPRIATE SIZE, GEOGRAPHIC AREA, PLANT EQUIPMENT THROUGHPUT, ORGANIZATIONS SERVED, FINANCIAL RESPONSIBILITY, AUTHORITY, AND SUPERVISION RECEIVED, WHICH RELATE TO THE JOB.

This position differs from the professional Engineer II in that the incumbent of this position is considered an expert in one or more recognized engineering fields and is required to undertake or coordinate complex engineering work such as the following:

a) **Project & Design Engineering:** This includes development of specific requirements from the date the project is conceived until completed, preparation of project proposal and expenditure request, consultation with proponent and management, design, materials ordering, scheduling, liaison with the construction forces, and following the job until a satisfactory operating facility. Accountable for the most economical expenditure of funds consistent with acceptable design practices and a sound facility with minimum maintenance cost and constructed at the least cost in keeping with target completion date. The magnitude of the projects usually ranges in expenditures of \$50,000 upwards to \$300,000. The following are typical projects: Modernization Crude Units #1 and #2; Products Injection, Qatif; Modification Boiler Plant Fuel Oil Burners; Secondary Power Distribution for Tank Farm Lighting, Refinery and Terminal Areas; Convert QRT-2 Pipeline to Gas Service; etc.

b) **Process Engineering:** Includes responsibility for providing technical service to company process units and oil handling facilities, coordination of engineering work to solve major problems on quality of manufactured products and crude oil processing, development of improved operation of process units, initiation of capital budget items and preparation of expenditure request justification with financial analysis. This includes maintaining up-to-date comprehension of all process problems and operating difficulties in area of responsibility, familiarity with demand pattern for quality and quantity of products, thorough understanding of capabilities and limitations of all facilities in area of responsibility and continuous study of developments in the process industry for possible application to Aramco operations. The following are typical projects: production of aviation grade aromatics from hydroformer, increased production of alkylate, improved conversion at plant, increased capacity of crude processing units, production of

roofing and pipecoating asphalt, design and operation of LPG facilities, processing of Khursaniyah crude, metering of refinery crude charge, desulfurization of kerosene, increased octane potential of refinery.

C. Includes parts or all of the scope mentioned under a) and b) above,

in addition to field or plant experience for direct support to plant operation. Incumbents may be rotated between various operation, maintenance, and engineering supporting staff in the plants.

9002 Principal Contacts

INCLUDE PURPOSE, FREQUENCY AND SIGNIFICANCE TO SAUDI ARAMCO.

Has frequent contacts with middle management within Projects Management, Construction, Operations, and Mechanical Services Organizations to discuss and resolve engineering problems. Frequently work with engineering design offices in kingdom and out of kingdom, acting as focal point of contact for project reviews and in technical matters related to his field of engineering.

9003 Principal Duties

DESCRIBE CONCISELY EACH PRINCIPAL WORK ACTIVITY LISTED IN A LOGICAL ORDER; NORMALLY, THE ORDER WILL BE TO LIST THE MOST IMPORTANT DUTY FIRST. INCLUDE IMPORTANT DECISIONS AND RECOMMENDATIONS MADE, IF APPLICABLE. FOR SINGLE APPLICATION JOBS INDICATE APPROXIMATE PERCENT OF TIME SPENT ACCOUNTING FOR AT LEAST 75% OF TOTAL TIME. START SENTENCES WITH ACTION VERBS. PLEASE INDICATE THE PERCENTAGE OF TIME AGAINST EACH PRINCIPAL DUTY.

- A. Plans, schedules and provides work direction as required for preparation of designs, processes, reports, correspondence and related data and assures the efficiency, adequacy and conformance to overall objectives of all phases of very complex engineering problems.
 - B. Support the development and formulates the basis for engineering studies in any of several basic or special engineering fields by analyzing and evaluating all data pertinent to problems. Evaluates data as to scope, effect on existing installations, economic value, long range planning and budgetary considerations.
 - C. Leads the activists of project proposal that include development of scope, functions, interrelationship, integration, physical solution definition, cost estimate, etc. Leads project execution for project proposal, initiatives, studies and continuous improvement of solutions and Problem solvers.
 - D. Initiates detailed work outline and makes decision as to basic approaches, processes and/or equipment. Performs work and/or delegates work to other engineers for final development of specialized or technical proposals and proposed projects.
 - E. Brings all elements of a project together, makes certain that all elements proceed satisfactorily on schedule and within the money allowed; and initiates corrective action as required. Reviews cost estimates, recommendation from vendors, consultants, and licensors.
 - F. Discusses, coordinates and resolves problems with personnel throughout Aramco and subsidiaries and with outside of company organizations. Acts as technical consultant when required.
 - G. Recommends new installations or modifications to improve existing facilities and standardization within broad fields of endeavor. Estimates costs, prepares justifications and completes expenditure
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requests as required.

- H. Reviews work of engineers directed. Checks that reports are written according to established methods of good report presentation. Takes recommendations for further study or report changes. Approves reports for transmittal to supervisor.

I. Has working knowledge of Saudi Aramco Standards and Specifications to review and provides consultation to proponent and project representatives related to their interpretation/ application of the standards in his area of expertise.

J. Develop scope and description of technology items, and leads the implementation and operation of developed solutions in the field.

Following are specific applications of this job:

Civil Engineer - Normally designs or studies structural modifications to facilities such as industrial shop buildings, warehouses, residences, marine piers, oil handling, processing, storage and pipeline facilities, facilities, sewer systems, roads and streets. Occasionally called upon to design new facilities of the types mentioned.

Chemical Engineer - Normally handles process studies or design modifications in utilities, oil manufacturing or oil handling facilities , Occasionally called upon to design or evaluate new process installations.

Electrical Engineer - Formally designs or studies electrical modifications to oil processing and oil handling facilities, residences and utilities. Occasionally called upon to design electrical aspects of new facilities of the type mentioned.

Mechanical Engineer - Normally designs or studies mechanical modifications to oil processing, oil handling and utilities facilities. Occasionally called upon to design mechanical aspects of new facilities of the type mentioned.

Survey Engineering - Includes engineering analysis and the development of recommendations and alternatives in the solution of complex problems related to the surveys of company and government properties and facilities. This includes the recognition of problems, through analysis of present situation and objectives, development of comprehensive program and implementation to produce the desired end product. Typical projects would involve the establishment of high precision horizontal control in remote desert regions for future oil and gas development, evaluation and recommendation of state of the art photogrammetric equipment for digital mapping systems.

9004 Minimum Requirements

A- EDUCATION - DEGREES AND/OR LICENSES REQUIRED; B- PREREQUISTE WORK EXPERIENCE IN ADDITION TO EDUCATION; C- OTHER.

A. EDUCATION: B.S. in Engineering.

B. EXPERIENCE: Nine (9) years, preferably in the oil industry or similar process industry, such that the incumbent is clearly recognized as an expert in his field.

C. LANGUAGE REQUIREMENTS: No second language is required.

D. OTHER: Must have a thorough knowledge of engineering practices and economic principles, calculation methods, design details, U.S. and Aramco's Codes, Standards and Specifications.