Job Code Classification System

Part II - Production Operations and Marketing/Transportation Operations

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American Petroleum Institute
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Job Code Classification System

Part II

Production Operations and

Marketing/Transportation Operations

Prepared for the American Petroleum Institute

By

OH 26 Industrial Hygiene Subcommittee

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PREFACE

The following job code classification system was developed under the auspices of the Medicine and Biological Science Department of the American Petroleum Institute. This revision adds production operations and marketing/transportation operations to the original Job Code Classification System for Petroleum Refineries and Selected Petrochemical Operations. The members of the OH-26 Subcommittee of the Industrial Hygiene Committee gave the guidance and support that made the addition to this classification system possible. The members verified with their company staff that the classification was practical, reasonable and consistent with production and marketing/transportation operations practices and terminology in the United States. API staff also reviewed the task lists for completeness and appropriateness.

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PREFACE TO PART I

The following job code classification system was developed under the auspices of the Medicine and Biological Science Department of the American Petroleum Institute. The members of the OH-11B Subcommittee of the Industrial Hygiene committee provided invaluable support in the construction of the classification system. Additionally, at each stage of development, committee members verified with staff of their representative companies that the classifications were practical, feasible, and consistent with standard practices and terminology in United States refineries.

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I. INTRODUCTION

The purpose of this revised job classification system is to provide a standardized method for identifying and classifying jobs within the petroleum refining industry, related petrochemical operations, production operations and marketing/transportation. This system is not an API standard, nor is it intended that companies should adopt the system for internal use. However, such a system could be utilized in inter- and intra-company occupational health studies whenever job data groupings would be useful. Possible applications include morbidity and mortality studies, qualitative and quantitative exposure evaluations, medical surveillance evaluations, exposure monitoring scheduling, and medical surveillance scheduling. Thus, the job classifications must be specific enough to permit meaningful examination of sub-populations within the petroleum industry, yet broad enough to allow for inter- and intra-company variations, now and in the past.

It was recognized from the outset that most existing job classification systems were devised for administrative purposes; they reflect personnel practices, organizational structure, and labor-relations considerations. In these systems, the factors generally used in classifying jobs are salary, training or education, level of responsibility and

accountability, and level of supervision. While useful, these factors have little bearing on occupational health. In occupational health, the primary focus is exposure. Since exposure levels can vary with operating conditions, equipment type, age and state-of-repair, it was determined that it was not feasible at this time to differentiate jobs on a quantitative exposure basis. Even qualitatively, it is difficult to exactly define the work environment because the process streams are often complex mixtures of a large number of chemicals, and the source of crude and operating parameters may influence their composition. Even though it may not be possible to qualitatively define the work environment, it is a reasonable assumption that similar processes potentially present similar qualitative exposures. Thus, process was selected as one variable in classifying a job.

The second variable in classifying a job is obviously the job itself. Job titles vary from company to company and are dependent on labor and personnel practices. However, using functional descriptions of jobs, a standardized list for the operations was developed.

II. USE OF THE JOB CLASSIFICATION SYSTEM

Each job can be classified using two variables: process and task. Process is where the individual is physically located rather than administratively assigned. The Standardized Process List with corresponding codes is in Section IV and the Standardized Task List and codes in Section V. Both lists are hierarchical in arrangement. A sample alternate display of the terms which more clearly indicates the hierarchy is shown in Figure I. Together, the process and task lists form a matrix of 241 process terms and 58 task terms.

In the Standardized Process List, 45 "units" have been identified. A process was designated as a "unit" when significantly different qualitative exposures would be expected to occur by virtue of the process, feedstock, and/or product streams. For the most part, the "unit" can be identified with a physical process area or location, e.g., "catalytic cracker." However, there are some "units" which have no precise physical locations, for example, "multi-process to plant-wide" and "office-non-field." The first two digits in the process code reflect the "unit" designation.

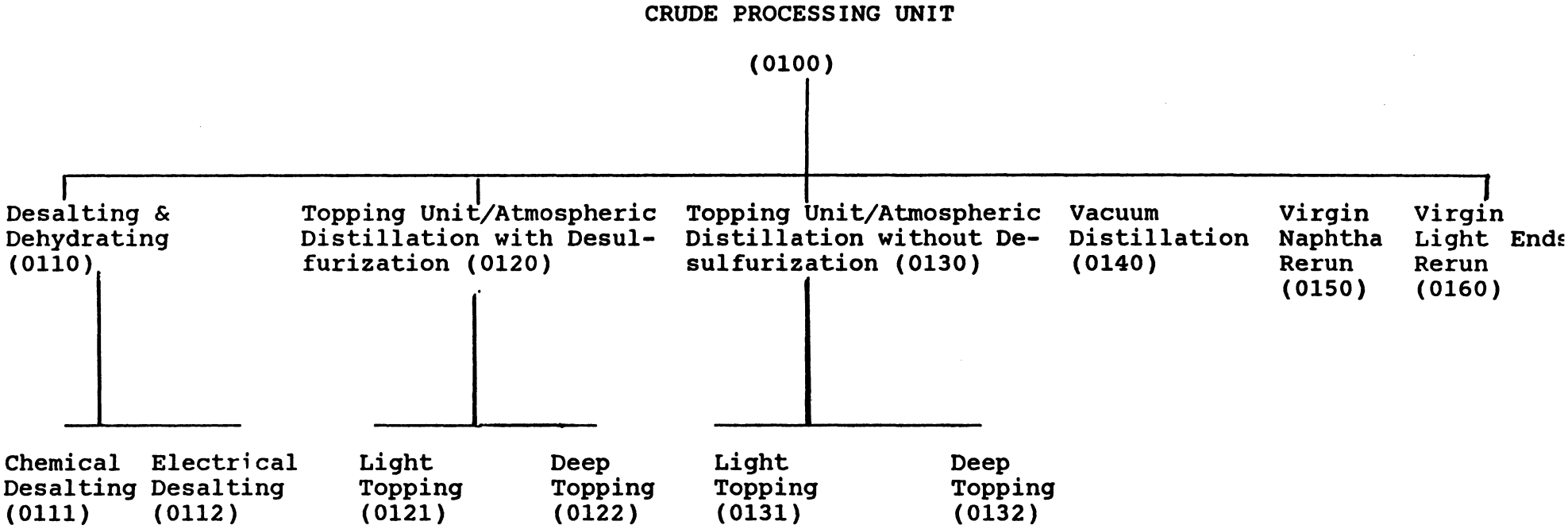

Figure 1

Hierarchical Arrangement for a

Crude Processing Unit (0100)

Sub-headings under "unit" were necessary to further refine the classification system. The sub-headings represent variations in the "unit" process or discrete sub-processes within the main "unit." Again, these reflect qualitative differences, but not the same degree as exist between "units." The third and fourth digits of the process code indicate second and third level headings, respectively.

In most cases, generic names rather than licensed process names were used in the Standardized Process List. No attempt has been made to differentiate processes on the basis of catalysts. It was recognized that exposures to catalysts can occur, and that these exposures may be potentially significant in terms of health effects. However, the number of possible catalysts is myriad, which would make the process list unwieldy. In addition, the catalyst is often proprietary.

In constructing the Process List, consideration was given to typical staffing practices in the petroleum industry. Therefore, even though a process is distinct and qualitatively different, it was given a "unit" heading if it is generally manned by the same staff as another process unit. This is best exemplified in the handling of the processes for H_2S

removal and recovery in petroleum refining. The operation of such an H_2S facility is usually an integral part of the operation of the main process unit and generally utilizes the same control room and staff. Therefore, "with" and "without H_2S removal/recovery facilities" are shown as sub-headings, or variations, of the major "unit". On the other hand, in production operations, H_2S cannot be classified this way as most oil fields are mixed.

The Standardized Task List is divided into sixteen major tasks, many of which have sub-task designations. The first letter of the task code reflects the major task, and the second letter, sub-tasks if applicable. As can be seen from the Task List, the majority of tasks are related to maintenance activities. It became apparent that many companies are cross-training their maintenance staff; the grouping of the maintenance tasks allows for this practice.

When classifying jobs according to the Standardized Process and Task Lists, one should use the most specific code possible. In cases where the most specific codes are not applicable because tasks and/or processes are combined, or knowledge of past processes is incomplete, it is permissible to use the next higher code in the hierarchy. For example, if it is not known whether an old fluid coking unit had H_2S removal/recovery facilities, the code for fluid-coking (0410) should be used. Or, if both fluid coking and delayed coking processes are present, and both are operated by the same personnel, the highest term "coking unit" (0400) would be used.

To allow the classification system greater flexibility, it is possible in some instances to skip the second level in the hierarchy. An example of this situation is in Receipt, Storage, and Movements Unit (2900). As can be seen, the third level headings are repetitive, i.e., product, intermediate, and crude are listed under each of the second-level headings. If a job involves more than one (but not necessarily all) of the second level headings, e.g., "crude", the process code would be 29X3. An "X" should be used for second level rather than "0" to clearly indicate that a level has been skipped. This type coding may be used whenever third level headings are repetitive.

An index to the Standardized Process List has been included as Section VI of this report. It should be stressed that this is for quick reference only and should not be used in lieu of carefully examining the process list to determine the most appropriate code.

III. EXAMPLES

(1) Job: Boardman on a fluid-bed catalytic cracker equipped with H_2S removal/recovery facilities.

Code: 0221BA

(2) Job: Helper, whose duties are primarily outside, on the above process unit.

Code: 0221BC

(3) Job: Welder, assigned to the above process unit.

Code: 0221CF

(4) Job: Welder, assigned to a zone which includes the above process unit and several others; performs routine maintenance.

Code: 2511CF

(5) Job: Welder in a maintenance shop.

Code: 2400CF

(6) Job: Cross-trained individual who can function as a welder, lead burner, pipefitter, boilermaker on a plant-wide basis; may do both routine or turnaround maintenance.

Code: 2510CX

(7) Job: Same as (6) but may also apply insulation.

Code: 2510MX

(8) Job: Shift supervisor, responsible for a department which includes several process units in a petrochemical plant.

Code: 2520AX

(9) Job: Industrial hygienist responsible for entire refinery.

Code: 2531JA

(10) Job: A senior (outside) roustabout, assigned to a block which includes several offshore platforms.

Code: 5030LF

(11) Job: A senior operator who handles pumping, tank farm activities, and blending of products in gas plant.

Code: 29X1BC

(12) Job: Personnel clerk in main office of a petrochemical plant.

Code: 2700AX

(13) Job: Process engineer for sulfuric acid plant; job requires that he spend some time in the process area, but the majority of his time is spent in office.

Code: 2532JA

(14) Job: Shipping and receiving clerk in the maintenance shop.

Code: 2400AX

(15) Job: Laboratory technician in the R&D laboratory.

Code: 2620KB

(16) Job: Lease operator, works on a field wide basis.

Code: 5030LE

(17) Job: Dock operator, unloading gasoline from a barge.

Code: 2941RF

(18) Job: Marketing terminal utilityman.

Code: 2951NA

(19) Job: Performs a variety of maintenance and laborer functions around a pipeline system.

Code: 2960PA

(20) Job: Pumps gasoline at a retail gasoline outlet.

Code: 2970NC

(21) Job: Shipping and receiving clerk at a marketing warehouse.

Code: 2990AX

(22) Job: Ordinary seaman on a ship carrying gasoline and fuel oil.

Code: 2941RB

(23) Job: Mechanic at a gas plant that works on gas and gasoline engines.

Code: 5050FX

APPENDIX

IV. STANDARDIZED PROCESS LIST

STANDARDIZED PROCESS LIST

CODE	PROCESS
0100	CRUDE PROCESSING UNIT
0110	Desalting and Dehydrating
0111	Chemical desalting
0112	Electrical desalting
0120	Topping Unit/Atmospheric Distillation with desulfurization (may have secondary stills)
0121	Light topping
0122	Deep topping
0130	Topping Unit/Atmospheric Distillation without desulfurization (may have secondary stills)
0131	Light topping
0132	Deep topping
0140	Vacuum Distillation (may occur at primary refinery or lube oil refinery - both process topped crude. Synonym: residuum stripping).
0150	Virgin naphtha rerun
0160	Virgin light ends rerun
0200	CATALYTIC CRACKING UNIT
0210	Fixed-bed

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
0211	With H_2S removal/recovery facilities
0212	Without H_2S removal/recovery facilities
0220	Fluid-bed (includes moving bed-involves regenerator)
0221	With H_2S removal/recovery facilities
0222	Without H_2S removal/recovery facilities
0230	Cracked naphtha rerun
0240	Cracked light ends rerun
0300	THERMAL CRACKING UNIT (includes Visbreaking and batch stills - no catalyst used.)
0400	COKING UNIT
0410	Fluid coking
0411	With H_2S removal/recovery facilities
0412	Without H_2S removal/recovery facilities
0420	Delayed coking
0421	With H_2S removal/recovery facilities
0422	Without H_2S removal/recovery facilities
0500	CATALYTIC REFORMING UNITS (utilize precious metal catalysts)
0510	Without hydrogenation

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
0511	With H_2S removal/recovery facilities
0512	Without H_2S removal/recovery facilities
0520	With hydrogenation
0521	With H_2S removal/recovery facilities
0522	Without H_2S removal/recovery facilities
0600	STEAM REFORMING UNIT
0700	HF ALKYLATION UNIT
0800	H_2SO_4 ALKYLATION UNIT
0900	$AlCl_3$ ALKYLATION UNIT
1000	RETORTING UNIT
1010	Shale oil
1020	Tar sand
1100	GASOLINE POLYMERIZATION UNIT
1110	Phosphoric acid
1120	Sulfuric acid
1200	NON-AROMATIC ISOMERIZATION UNIT (e.g. Butamer, pentane, hexane, etc.)
1300	AROMATIC ISOMERIZATION UNIT (when not combined with an aromatic recovery unit)

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
1400	KETONE DEWAXING UNIT
1410	MEK
1411	Alone
1412	With benzene
1413	With toluene
1420	MIBK
1421	Alone
1422	With benzene
1423	With toluene
1430	Acetone
1431	Alone
1432	With benzene
1440	MBK
1500	LUBE/BASE OIL EXTRACTION UNIT
1510	Phenol
1520	Duo-Sol
1530	Furfural
1540	DMSO
1550	Di-Me
1560	Bariso
1570	Propane

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
1571	Dewaxing
1572	Deasphalting
1600	SO_2 (EDELEANU) EXTRACTION UNIT
1700	AROMATICS RECOVERY UNIT (includes combined isomerization and recovery)
1710	Distillation
1720	Extraction
1721	Glycols (e.g. Udex, Tetra)
1722	1,1-dioxycyclopentane (e.g. Shell-Sulfolane)
1730	Crystallization
1740	Selective adsorption
1800	CLAY TREATING UNIT
1810	Lube/base oil
1820	Benzene, toluene, xylene (BTX)
1830	Middle distillates
1900	BAUXITE TREATING UNIT (WAX)
2000	SULFURIC ACID TREATING UNIT
2010	Lube/base oil
2020	Wax
2030	Middle distillates

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
2100	TREATING (SWEETENING) LIGHT OILS UNIT
2110	Caustic and inhibitor
2111	Gasoline and components
2112	Middle distillates
2113	Solvents
2120	Doctor
2121	Gasoline and components
2122	Middle distillates
2123	Solvents
2130	Cupric chloride
2131	Gasoline and components
2132	Middle distillates
2133	Solvents
2140	Others, e.g. cycloversion
2200	HYDROGEN TREATING UNIT (if operated as a separate unit)
2210	Desulfurization and/or denitrification
2211	Gasoline and components
2212	Middle distillates
2213	Solvents

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
2220	Saturation
2221	Olefin
2222	Aromatic
2223	Lube/base oil polishing (hydrofining)
2230	Cracking
2231	Distillate
2232	Residuum
2233	Lube/base oil
2234	For petrochem plant
2300	WASTE TREATMENT UNIT
2310	Aqueous Waste
2311	Sanitary
2312	Storm
2313	Process (e.g. API Separator, charcoal filtration, secondary or tertiary treatment)
2320	Solid Waste
2321	Collection
2322	Incineration
2323	Land-fill
2324	Land-farm
2330	Gaseous waste (e.g. tail gas clean-up)

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
2400	MAINTENANCE SHOP UNIT
2500	MULTI-PROCESS TO PLANT-WIDE UNIT
2510	Maintenance
2511	Routine
2512	Turnaround
2520	Operations (e.g. labor pool, yard, shift-breakers, supervisors/foreman)
2530	Services
2531	Fire, safety, industrial hygiene, security
2532	Engineering, inspection
2600	LABORATORY UNIT
2610	Quality control (QC)
2620	Research and development (R & D)
2700	OFFICE - NON-FIELD UNIT
2800	UTILITY UNIT
2810	Water treatment
2820	Boiler house (includes electrical and steam)
2830	Pump house (cooling tower)
2900	RECEIPT, STORAGE, AND MOVEMENTS UNIT

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
2910	Pump
2911	Product
2912	Intermediate
2913	Crude
2920	Tank farms
2921	Product
2923	Intermediate
2923	Crude
2930	Blending (includes additives)
2931	Product
2932	Intermediate
2933	Crude
2940	Water transport
2941	Product
2942	Intermediate
2943	Crude
2950	Truck and rail transport
2951	Product
2952	Intermediate
2953	Crude

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
2960	Pipeline transport
2961	Product
2962	Intermediate
2963	Crude
2970	Service Station
2980	Airport
2981	Commercial Airport
2982	Private Airport
2990	Warehouse
3000	NGL (NATURAL GAS LIQUIDS) RECOVERY UNIT
3010	Expansion
3011	With H_2S removal/recovery facilities
3012	Without H_2S removal/recovery facilities
3020	Refrigeration
3021	With H_2S removal/recovery facilities
3022	Without H_2S removal/recovery facilities
3030	Cryogenic (colder than propane refrigeration)
3031	With H_2S removal/recovery facilities
3032	Without H_2S removal/recovery facilities

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
3040	Absorption
3041	With H_2S removal/recovery facilities
3042	Without H_2S removal/recovery facilities
3100	NGL (NATURAL GAS LIQUIDS) FRACTIONATION UNIT
3200	HELIUM RECOVERY UNIT
3300	SULFURIC ACID MANUFACTURING UNIT
3310	Chamber
3320	Contact
3400	SULFUR RECOVERY UNIT
3410	Direct Oxidation
3420	Claus
3500	HYDROGEN MANUFACTURING UNIT
3510	Steam reforming
3520	Partial oxidation (Texaco)
3530	RKN reforming (specifically to produce H_2)
3600	ASPHALT MANUFACTURING UNIT
3610	Steam distillation
3620	Vacuum distillation
3630	Air blowing with catalyst
3640	Air blowing without catalyst

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
3700	GREASE MANUFACTURING UNIT (includes both batch and continuous)
3800	LUBE/BASE OIL MANUFACTURING UNIT
3900	PACKAGING UNIT (excluding wax)
3910	Lube/base oil and grease only
3920	Lube/base oil, grease, and other consumer products
4000	WAX PACKAGING UNIT
4100	AROMATICS PRODUCTION UNIT
4110	Catalytic reforming - BTX (dehydrogenation)
4120	Hydrogen dealkylation (platforming)
4130	Thermal reforming
4200	CUMENE PRODUCTION UNIT
4210	Phosphoric
4220	Chlorine
4230	Hydroperoxide/phenol
4300	ETHYLENE PRODUCTION UNIT
4310	Steam/furnace/tube
4320	Other

STANDARDIZED PROCESS LIST (continued)

CODE	PROCESS
4400	NITROGEN PRODUCT'S UNIT
4410	Ammonia plants
4420	Other nitric products
5000	PRODUCTION OPERATIONS
5010	Producing area general
5020	Drilling
5030	Lease operation, treating, tank battery, automatic custody transfer stations, pumping well or wellhead
5040	Compressor station
5050	Gas plant
5060	Gas dehydration and drier facilities
5070	Office-living quarters
5080	Crew boat
5090	Water, steam, gas injection station
5100	Well workover
5110	Well servicing
5200	Enhanced oil recovery - general
5300	Waste water treatment
5400	Exploration
5410	Exploratory drilling

V. STANDARDIZED TASK LIST

STANDARDIZED TASK LIST

CODE	TASK	COMMENT
AX	ADMINISTRATION AND/OR SUPERVISION	Occupations concerned with specialized administrative and managerial functions, or clerical work, or those whose primary function is to supervise and coordinate activities of others.
BX	Operations	
BA	Inside (Control Room)	Operates control panel to regulate temperature, pressure, rate of flow, and tank level in petroleum refining, processing, and treating units and petrochemical units, according to process schedules.
BB	Outside Apprentice	An operator whose duties are primarily outside, and who has not yet completed sufficient on-the-job training to be considered a qualified, skilled worker. In general, assists and reports to outside journeyman (Task BC).
BC	Outside Journeyman	An operator whose duties are primarily outside of the control room and who has completed a specified training program. Duties include moving controls to regulate valves, pumps, compressors, auxiliary equipment to direct flow of products; checking temperature and pressure gauges and flow meters; checking equipment for malfunctions; and patrolling units to verify safe and efficient operating conditions. May perform minor repair and maintenance of equipment; sample liquids and gases, and test products for chemical characteristics and color; lubricate equipment; clean interior of processing units by circulating chemicals through them; and treat products.

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
CX	MAINTENANCE CRAFTS-METAL	
CA	Boilermaking	This group includes occupations concerned with assembling, erecting, and repairing boilers and related equipment, attachments and accessories. Includes laying out, cutting, fitting, and bolting, welding, or riveting heavy metal plates, boiler tubes, and castings.
CB	Lead Burning	Welds lead or alloy, using gas torch or arc welding equipment, to install and repair lead items. Installs or repairs equipment such as lead pipes, valves, floors, and tank linings. Cuts lead sheets or pipe using powered saws, hand shears or chopping knife. (See also Welders, Task CF).
CC	Pipefitting	This group includes occupations concerned with assembling and installing gas, steam, plumbing, and related fixtures, pipes, and fittings in structures, using pipe-cutting and pipe-threading tools, welding equipment, and other pipefitting tools and equipment.
CD	Structural Steel (includes rigging)	This group includes occupations concerned with joining structural parts and components with bolts, screws, and related fasteners, or by fitting (placing) reinforcing steel or iron in forms to strengthen concrete. Rigging: assembles rigging to fit and move equipment or material; selects cable, ropes, pulleys, winches, blocks and sheaves, according to weight and size of load to be moved.

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
CE	Tinsmithing	This group includes occupations concerned with laying out, cutting to size, bending or shaping, and soldering, brazing, riveting, or crimping sheet metal, such as copper, steel, aluminum, galvanized iron, and tin cold air vents, cabinets, and light tanks.
CF	Welding	This group excludes those known as lead burners (Task CB) whose primary occupation is welding with lead materials. This group includes occupations primarily concerned with joining, surfacing, or otherwise fabricating or repairing structures or parts of metal or other weldable materials, such as plastic or glass, applying the following welding or cutting processes: arc; gas; resistance; solid state (friction, ultra-sonic, cold, explosion, diffusion); and other processes, such as electro-slag, electron beam, induction, thermit, and laser beam.
DX	MAINTENANCE CRAFTS-NON-METAL	
DA	Carpentry	This group includes occupations concerned with fabricating, installing and repairing structures and structural members made of wood and materials that can be worked like wood, such as plastic and fiberglass, using band saws, rip saws, planers, braces, hammers and other carpentry tools and woodworking machines.
DB	Insulating	This group includes occupations concerned with covering and lining structure with asbestos, cork, canvas, tar paper, magnesia, and related materials for insulation purposes, using saws, knives, rasps, trowels, and other tools and implements.

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
DC	Masonry	This group includes occupations working with artificial stone, brick, concrete, stone and the like. It includes those classified as brick-layer, cement mason, stone mason, etc.
DD	Painting	This group includes occupations concerned with applying decorative or protective materials, such as paint, enamel, varnish, shellac, stain or oil to articles by brushing, spraying, wiping, or hand-dipping; includes preparing surface of the article, mixing coating ingredients, hand-rubbing, filled or coated surfaces, and related activity.
EX	MAINTENANCE CRAFTS-ELECTRICAL SYSTEMS	
EA	Electrical Only	This classification excludes those individuals whose jobs are combined to electrician and instrument man or instrument man only (see also tasks EB and EC). This group includes occupations concerned with assembling, installing, erecting, and repairing electrical equipment and related structures designed for electric power generation, transmission, and distribution; communication, signaling, and object detection; process control, fire control, and data processing; transportation and materials handling; heating, air conditioning, refrigeration, illumination; and other industrial, commercial, and domestic electrical applications.

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
EB	Instrument Only	This group includes occupations concerned with fabricating and repairing instruments for measuring, controlling, and indicating temperature, pressure and vacuum, fluid flow, liquid level, mechanical motion, rotation, humidity, density, acidity or alkalinity, and combustion; dial pressure gauges; scales and balances; and apparatus for testing such physical properties as hardness, tension, torsion, compression, and elasticity.
EC	Electrical and Instrument	This group combines the duties of electrical (Task EA) and instrument (Task EB).
FX	MAINTENANCE CRAFTS-ENGINES	
FA	Gas	Repairs and maintains gas-driven, internal-combustion engines that power electric generators, compressors, and similar equipment, using hand tools and precision measuring devices.
FB	Gasoline/Diesel	Repairs and maintains gasoline and/or diesel engines used to power machines such as, ships, trucks, railroad trains, electric generators, and construction machinery, using hand tools, precision measuring instruments, and machine tools.
GX	MACHINING	This group includes occupations concerned with shaping metal parts by milling, turning, planning, abrading, boring, chipping, sawing, and shaving with a variety of metal working machines. Includes laying out, job-setting, fitting, assembling and repairing.

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
HX	TRUCK/TRAILER/RAIL CRANE (MOBILE EQUIPMENT OPERATOR)	This category includes occupations concerned with the transportation of people and cargo from one geographical location to another, or in or around establishments, by various methods.
IX	MAINTENANCE-RELATED ACTIVITIES	
IA	Recovery/Salvage	Recovers and/or salvages reusable materials and disposes of waste. May involved collection, inspection, separation, weighing, and minor repairs to scrap containers.
IB	Yard	Performs any combination of following tasks in refinery: digs ditches, builds dikes and levees, and fills holes using pick and shovel. Smooths ground surfaces and roadways, using hand tamper. Cleans refining equipment. Moves debris from roadways and work areas, and sprays and hoes weeds. Mixes and pours cement. Unloads material, such as tools, equipment, cement, etc., manually or with handtruck; and stacks ,barrels and sacks for storage. Uncrates equipment and parts. Rips open sacks, and dumps chemicals and catalysts into mixing, treating, or storage tanks. Dopes pipelines to prevent corrosion. Changes hoist cables, and rigs chain hoists rope blocks, etc., used to move or raise equipment. Skims oil from cooling water in water boxes.
JX	FIELD/SERVICES STAFF	Personnel who are not physically assigned to operating units or areas, but whose duties require them to periodically inspect or perform tasks in such areas.

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
JA	Professional	An individual who can work relatively independently by virtue of educational qualifications, work experience, and/or legal certification.
JB	Technical	An individual who works in direct support of a professional (See Task JA).
JC	Non-Technical	An individual who provides support of an essentially non-technical nature to professional (Task JA) or technical (Task JB) staff.
KX	LABORATORY STAFF	Individuals working in a laboratory performing routine or special test, or research.
KA	Professional	An individual who can work relatively independently by virtue of educational qualifications, work experience, and/or legal certification.
KB	Technical	An individual who works in direct support of a professional (See Task EA).
KC	Non-Technical	An individual who provides support of an essentially non-technical nature to professional (Task KA) or technical (Task KB) staff.
LA	Derrick Operator	Works on a rotary drilling rig, assisting in raising and lowering casing and drill pipe and in carrying on drilling operations. Work involves: From position near top of rig, guiding and attaching or detaching elevator to or from upper end of sections of casing or drill pipe as it is being run into or pulled out of well; tending slush or mud pumps which circulate a heavy mixture of clay and

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
		water through a drill pipe to flush out drillings and cool bit; cleaning, oiling, greasing, inspecting, and repairing pulley, blocks, and cables that are used to raise and lower casing and drill pipe; and assists rotary driller to regulate valves in controlling flow of oil when well is brought in (first begins flowing).
LB	Driller Rotary	(Core driller; well driller) Supervises drilling operations and operates draw works that serve as a power distribution center for the raising and lowering of drill pipe and casing, and for rotation of drill pipe in the well. Work involves: Manipulating levers and throttles to control speed of rotary table which rotates string of tools, and to regulate the pressure of the tools at the bottom of the well as indicated by a gage; connecting and disconnecting sections of drill pipe as they run into or out of well; selecting drill bits according to nature of strata encountered and changing them when dull or when strata change; manipulating levels, pedals, and brakes to control draw works which supply power necessary to lower and raise drill pipe and casing into and out of well; checking operation of slush pumps to see that fluid, which cools bit, removes cuttings, and seals walls of well with clay, is circulating properly and is of correct consistency, inspecting core or cuttings from well to determine nature of strata drilled through; fishing for and removing equipment lost in well, using special tools at end of drill pipe or cable; and keeping record of location and nature of strata, number of feet advanced per shift, and material used. May start flow of well by assisting shooter in lowering and setting off a charge of explosives in the strata and control flow of well when it comes in

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
		(first begins flowing) by capping it or regulating control valves. Supervises and is assisted by workers, such as derrick operator and rotary floor worker.
LC	Floor Worker	(Rotary driller helper, rotary helper; roughneck) Assists in drilling operations and in running drill pipe and casing in and out of well. Work involves: Guiding lower end of section of drill pipe and casing to or from well opening as derrick operator handles upper end in running sections into or out of well; racking or unracking drill pipe sections in order of removal; helping connect or disconnect joints between section; using tongs or chain wrenches to grip and turn pipe; inserting and removing slips (curved metal wedges) used at top of well to hold drill pipe at desired point when it is being run into or out of well; operating a cathead (power-driven winch), the cable of which is attached to the tongs or wrench to loosen or tighten the joints; digging ditches, racking tools, and cleaning up drilling floor or around rig; and assisting in making repairs to drilling machinery, slush pumps, and derrick.
LD	Hoist Operator	(Winch operator) Operates truck-mounted hoist to lower into and raise from oil or gas wells instruments used for purposes such as directional drilling, electric well logging, perforation, and free-point shooting. May connect or assist in connecting the various instruments to conductor cable. May also maintain and repair cables and hoisting equipment.

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
LE	Pumper	(Oil-well pumper) Operates the power unit (stem, gas, gasoline, electric, or Diesel) which drives the oil-well pumps used to lift oil from wells in which natural flow has diminished or ceased. Work includes: Opening and closing valves to regulate flow of oil from well to storage tanks or into pipe lines; reading meters and making daily production reports of the amount and quality of oil pumped; checking pressure of separator which separates natural gas from oil and making adjustments, lubricating and making minor repairs to pumps; and reporting major breakdowns and well difficulties. May make regular tests of oil for bottom sediment and water.
LF	Roustabout	(Laborer) Performs, upon assignment, any combination of the following tasks in and about oil fields: Digging trenches for drainage around oil wells, storage tanks, and other installations; filling excavations with dirt; loading and unloading trucks by hand or using hand-trucks; assisting pumpers in setting up pumps used to pump oil, gas, water, or mud; bailing spilled oil into buckets and barrels; cleaning machinery, cutting down trees and brush around oil field installations; segregating pipe sections on racks in material yard; and connecting tanks and flow lines and performing other miscellaneous pipefitting work. Casual laborers who are hired for sporadic needs and maintenance floor workers (gang pushers) should be excluded from this classification. Difficulties are sometimes encountered in distinguishing between roustabouts and roughnecks (rotary floor worker). Whenever such difficulties arise, roughnecks should be considered as those workers who assist in the actual

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
		drilling operations and those operations alone. Roustabouts are employed after the well is finished. They assist in various other functions encountered in petroleum production.
LG	Well puller	(Casing puller; clutchworker, rodworker; hydraulic-tool operator) Controls power hoisting equipment to pull casing, tubing, and pumping rods from oil and gas wells for repair and to lower repaired equipment; testing devices, and servicing tools into well. Duties usually involved: Attaching cable clamps to top of pump rod or casing and starting winch or hydraulic jack that raises rod or casing using hand or power wrenches and tongs; and running packer (plug device) into well to control flow of oil, water, or gas during well-pulling operations. May lower pressure recording device into well and interpret findings. May also test pipes for leaks using hydraulic findings. May also test pipes for leaks using hydraulic testing equipment. Workers operating power hoisting equipment mounted on a truck (hoist operators) and derrick operators are excluded from this classification.
MX	Maintenance, Cross Craft	This group includes those workers whose duties involve multiple tasks from more than one of the codes CX, DX, EX or FX.
NA	Terminal Operator	Mechanically skilled person whose primary responsibility is to maintain and repair equipment at a terminal. Other duties include: Inventory control procedures; pipeline transfers of products, gauging storage tanks, sampling and testing products, pipeline and marine receipt sampling, and occasional transport loading.

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
NB	Transport Driver	Drives transport truck to deliver gasoline, fuel oil, lubricating oil, or liquified petroleum gas to customers. Drives truck into position to load at filling rack. Loads transport if not done by other terminal personnel. Drives truck to customer premises and unloads product.
NC	Attendant	Services automobiles, buses, trucks, or aircraft with fuel, lubricants, and accessories. May perform minor repairs.
ND	Furnace Cleaner or Repairer	Cleans residential fire pots, ducts, vents, registers, air chambers and filter screens of domestic furnaces. Scrapes soot and ash from fire pot and smoke chambers. Examines seams of furnace section for defects, such as cracks.
PA	Pipeliner	Maintains and repairs pipelines, pumping stations, and tank frames by performing any combination of the following duties: Corrosion control by sandblasting, application of corrosion resistant materials and pipe wrapping; operates heavy earthmoving equipment; positions materials for carpenters, mechanics and welders; installs screwpipe and manifold connections; cleans storage tanks; yardwork; may use chemicals to clear foliage; may load or unload trucks; walk along pipeline to detect leaks.
PB	Gauger	Operates pumps and manifold systems to regulate flow of crude and products into pipelines, trucks, barges and railcars; gauges, samples and determines temperature of tank contents; inspects valves, manifolds and flanges throughout system to detect malfunction; tightens connections; operates blenders and heaters to mix, blend and

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
		heat products; may perform variety of tests to determine viscosity, specific gravity and flash point of sample contents.
PC	Station Operator	Operates electric, diesel, gas or automated pumping equipment to pump and route petroleum products through pipelines at main-line or terminal stations according to instructions and destinations; opens or closes pipeline valves; switches oil or product to alternative pipelines to prevent contamination; inspects pumping equipment to detect malfunctioning and leaks; lubricates machinery, and repairs and adjusts pumps and equipment, using handtools; records pressures, temperature, and flow rates, and maintains records of oil stock and oil receipts; may pump natural gas or natural gas liquid products; may gauge and test oil.
RA	Deck Officer	Supervises deck personnel during shift; steers vessel; responsible for proper loading and unloading of products; gauges product and regulates flow, assisted by deck personnel; inspects tanks prior to product introduction; communicates with dock personnel as to requirements during loading and unloading; assigns maintenance and repair operations to deck personnel.
RB	Deck Personnel	Connects hose couplings and/or activates pumps to transfer liquid cargos between land-based facility and ship or barge; gauges tanks and measures temperature of liquid cargos; wash and gas free cargo tanks; mucks cargo tanks; stands watch to look for obstructions in vessel's path; measures water depth; breaks out rigs; repairs and stows gear; paints deck or superstructure of vessel; handles

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
		lines to moor vessel; cleans deck; lubricates machinery and equipment; assists licensed officers in loading/ unloading cargo.
RC	Pumpman/Mechanic	Performs maintenance and repair of cargo and ballast tank piping and gauging systems. Maintenance and repair of cargo, ballast and stripping pumps. Assists deck officer with tank inspections. Connects and disconnect product hoses. Assist with tank washing and gas freeing operations. Bilge cleaning and repair.
RD	Engine Officer	Supervises engine personnel during shift; insures proper operation of engine machinery; maintains engine log; inspects gauges and meters throughout engine/boiler rooms, assisted by engine personnel; performs necessary emergency repairs to maintain vessel movement; repairs engine room equipment, primarily while vessel is docked.
RE	Engine Personnel	Inspects gauges and meters throughout engine/boiler rooms to insure engine operating parameters are within specified limits; periodically makes rounds of entire area to visually and audibly verify proper engine operation; assists engineers with minor mechanical repairs; oils and greases moving engine parts; cleans engine/boiler room areas and machinery.
RF	Dock Personnel	Performs any combination of tasks on dock including: positions vessel and handles lines during docking and undocking; connects hose couplings to enable liquid cargo, such as petroleum, gasoline, heating oil, and chemicals to be pumped from and into barges and tankers; uses tape and thermometer to measure depth and temperature of liquid

STANDARDIZED TASK LIST (continued)

CODE	TASK	COMMENT
		cargo to be unloaded; opens valve to allow flow of cargo through hose; samples product and tests for gravity and color; operates hose and line winches; cleans and paints docks, lines and valves.
SX	Service Occupations	Tasks concerned with preparing and serving food and drink in commercial and other establishments, providing lodging and related services; performing cleaning and maintenance services to the interiors of buildings.

VI. INDEX FOR STANDARDIZED PROCESS LIST

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