Fuel Department Operations Manual
NAVSUP Fleet Logistics Center Pearl Harbor

Prepared by:

NAVAL SUPPLY SYSTEMS COMMAND

FLEET LOGISTICS CENTER
PEARL HARBOR

1942 Gaffney Street Suite 100
Joint Base Pearl Harbor Hickam, Hawaii 96860-4549

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Immediate Response Actions for OHS Incidents

In the event of a spill or release that requires an emergency response, the following actions should be taken by the discoverer. The order of the actions will depend on the existing conditions.

1. Immediately alert nearby personnel who may be affected by the discharge.

2. Activate nearest fire alarm if there is imminent danger to life, the environment or property, or if fire threatens or starts.

3. Report spill immediately to the Regional Dispatch Center and the Control Room Operator.

Regional Dispatch Center
911 (24-hr)

Port Operations Control Tower
For Oil Releases on Water
474-6262 or Channel 69

Control Room Operator
471-7878

4. Restrict all ignition sources if flammable vapors are present or expected.

5. If properly trained and authorized, and it is safe to do so, initiate available on-site countermeasures to minimize spread of contaminants and stop source of spill or leak. If possible the following response measures should be taken:

- Shut down equipment.
- Isolate leaks in lines with valves.
- Upright leaking drums or containers.
- Apply absorbent material.
- Plug leaks.
- Block floor drains, storm drains, or ditches.
- Build temporary dikes to prevent further spreading or contamination using soil, sand, or absorbents.

6. If necessary, evacuate upwind/upgrade to a safe distance and standby until emergency response personnel arrive on scene. Provide known details of spill when assistance arrives.

7. If available, provide Material Safety Data Sheet, floor plans, etc. to emergency response personnel.

8. If directed by the NOSC or Incident Commander, the Control Room Operator shall call:

- **NRC: 1-800-424-8802 (24-hour)**
  202-267-2675 (direct)
- **USCG MSO: 522-8260 (24-hour)**
- **SERC: 586-4249 (247-2191 after hours)**
- **LEPC: 723-8930**

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**Record of FISC Pearl Fuel Department
Operations and Maintenance Manual
Updates and Changes**

Change Number	Page(s) Affected	Abstract	Date	Author's Initials

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Contents

1 Introduction

1.1 *Purpose*

This manual provides NAVSUP Fleet Logistic Center Pearl Harbor (FLCPH) personnel with the necessary guidelines, general knowledge and references to operate and maintain the FLCPH Bulk Fuel Supply Facility and Red Hill Fuel Storage Facility. It is also intended to be a guide for trainees and personnel newly assigned to provide an overall understanding of product receipt, storage, issue, and maintenance procedures.

1.2 *Background*

The need for a comprehensive manual to delineate petroleum management and responsibilities at FLCPH has been demonstrated repeatedly by technical assistance visits, Navy audits, and IG inspections. Management of this facility is complex. The historical significance notwithstanding, the petroleum depot at Pearl Harbor remains matchless in the world due it size as well as to the unique nature of the Red Hill Facility. Procedures that would be considered typical at other petroleum facilities may not apply. Conversely, there are procedures, equipment and processes that are found nowhere else within the U.S. Navy or Department of Defense.

It is imperative that this manual remain the primary reference for Pearl Harbor petroleum operations. It is intended that this document becomes the principal ready reference to determine the correct course of action with daily operations, uncommon activities and emergency situations. However, personnel must be aware of the vast array of fuel-related publications, many which will be reference within this document, that exist, become familiar, and make use of them regularly.

1.3 *Scope*

This publication provides FLCPH management policy, guidance and direction. For more detailed information and guidance, appropriate references are noted and should be consulted. This manual is applicable and has been structured to cover all major facets of FLCPH Bulk Petroleum Terminal.

1.4 *Manual Organization*

This Manual was designed to comply with the following regulations and directives:

- DoD 4140.25-M, DoD Management of Bulk Petroleum Products, Natural Gas, and Coal
- 33 CFR Part 154, Facilities Transferring Oil or Hazardous Materials in Bulk
- 29 CFR §1910.38, Occupational Safety and Health Standards
- MIL–STD 3004: Quality Surveillance for Fuels, Lubricants, and Related Products
- NAVAIR 00-80T-109: Aircraft Refueling Naval Air Training and Operating Procedures Standardization (NATOPS) Manual
- UFC 3-460-01, Unified Facilities Criteria, Petroleum Fuel Facilities
- UFC 3-460-03, Unified Facilities Criteria, Operation And Maintenance: Maintenance Of Petroleum Systems

This manual is required to be kept current with the facility conditions, and therefore, will need to be updated on an as-needed basis. The facility is required to maintain an updated library of regulations and standards which are available to facility personnel. This library is located at the Fuels Office in Building 1757.

1.5 *Mission*

The mission of the Fuel Department includes the following; direct and coordinate the receipt, storage, issue, and distribution of bulk petroleum products required for support of fleet units and the area military shore activities. ("Bulk" is defines as those products stored in containers larger than 55-gallon drums.)

Perform duties as a Bulk Petroleum Defense Fuel Support Point (DFSP) in support of Defense Logistics Agency Energy (DLA-E). Maintain and operate a petroleum laboratory designed to serve all military departments and 3rd Fleet Units in the Pacific Basin, including Guam and Wake Island, to test all petroleum samples received to ensure usability and quality status of petroleum assets. Maintain bulk fuel facilities in an operational ready status through corrective and planned maintenance in accordance with higher directives.

1.6 *Location*

NAME:	Fuel Directorate (Code 700) NAVSUP Fleet Logistics Center (FLC)
OWNER:	U.S. Navy
SIC CODE:	9711 National Security
MAILING ADDRESS:	1942 Gaffney Street Suite 100 Pearl Harbor, Hawaii 96860-4549
PHYSICAL LOCATION:	7 Miles East of Honolulu Located within the Joint Base Pearl Harbor Hickam Complex Bldg. 1757, East of Hotel Pier
COUNTY:	Honolulu
LATITUDE	21° 21' 30
LONGITUDE	157° 56' 54

1.7 *Hours of Operation:*

The fueling facilities of FLC PH operate according to the following schedules*:

Piers/Fuel Storage Areas:

Monday through Friday	0730-1530
Saturday	0730-1530
Sunday	0730-1530
Federal holidays	Closed

Administrative Office:

Monday through Friday	0800-1730
Saturday	Closed
Sunday	Closed
Federal Holidays	Closed

(*The Pearl Harbor Bulk Fuel Facility is manned on a 24 hour basis and off-hour operations may be conducted with prior authorization)

1.8 *Capabilities*

With virtually no exception, the FLCPH Fuel Depot is capable of servicing any and all U.S. Government vessels from small patrol boats and motor launches to the aircraft carriers and refueling tankers.

There are no manpower constraints limiting the number of vessels that can be serviced. A minimum of four (4) qualified FLC Fuel Department personnel will be on duty for all fuel transfer operations:*

1. Control Room Operator (WG-11)
2. Terminal Person in Charge (TPIC) Fuel Distribution Service Operator (WG-7/9)
3. Fuel Distribution Service Worker 1 (WG-6/9)
4. Fuel Distribution Service Worker 2 (WG-6/9)

*When fuel is being distributed from the Red Hill Fuel Facility, an additional qualified operator must be present in the Red Hill Control Room

As many ships that can be berthed, can be fueled at H Pier, Mike Dock, Bravo Dock, Kilo 10/11, and Sierra 13/14 Dock. The only possible constraint would be limited by the MAWP of the pipeline and pump systems. Fuel can also be provided to any vessel on or off base via fuel department tanker truck.

At Hotel Pier, all three fuel products can be received simultaneously. Issues of the same product can be made simultaneously to two or more ships using meter carts. The fuel facilities of FLC PH are government-operated facilities with the task of receiving, storing, and distributing the following petroleum products in support of military requirements.

1.9 *Petroleum Products:*

Fuels

• Fuel, Naval Distillate	9140-00-273-2377	F76
• Turbine Fuel, Aviation	9130-00-273-2379	JP5
• Turbine Fuel, Aviation	9130-01-031-5816	JP8
• Fuel Oil, Reclaimed	9140-01-068-6903	FOR

Lubricating Oils:

• Lube Oil, Engine (9250)	9150-00-181-8232	LO6
• Lube Oil, Steam (2190)	9150-01-372-6915	LTL

1.10 *History*

The United States first gained rights to Pearl Harbor in 1887, when the Hawaiian monarchy permitted a coaling and repair station. After the United States annexed Hawaii in 1900, Pearl Harbor was made a naval base.

Pearl Harbor is a land-locked harbor on the southern coast of the island of Oahu, Hawaii, West of Honolulu. The harbor is one of the largest and best natural harbors in the eastern Pacific Ocean. The harbor is in the vicinity of many U.S. military installations, including the chief U.S. Pacific naval base, Hickam Air Force Base, Pearl Harbor Naval Air Station, and Camp H. M. Smith, headquarters of the U.S. Pacific Command.

1.12 *Duties and Responsibilities of Key Government Personnel*

This section consists of a general overview of the duties and responsibilities of key government personnel.

1.12.1 Fuel Department Director

Under the direction of the Commanding Officer, and in accordance with existing regulations, instructions, and policy, the Fuel Department Director shall:

- Operate a Defense Fuel Support Point (DFSP) of the Defense Logistics Agency (DLA), as the Responsible Officer, performing the duties assigned to him in writing in accordance with DoD Manual 4140.25M (July 1998)
- Maintain Prepositioned War Reserve Stock (PWRS) and Peace Time Operating Stock
- (POS) levels as assigned by DLA-E Inventory Management Plan (IMP)
- Provide for receipt and storage of DLA-owned bulk petroleum products consistent with
- PWRS and POS assigned levels
- Provide for the issue of DLA-owned bulk petroleum products in support of military activities
- Ensure fuel accountability records are maintained in accordance with DoD 4140.25M and other higher directives and accountability requirements for oily waste/waste oil as per 40 CFR 279 are met
- Administer, direct, and implement a petroleum quality control and surveillance program for the receipt, storage, and issue of petroleum products
- Operate a Class A Petroleum Testing Laboratory to provide product quality surveillance for military activities in the Pacific Basin area of responsibility and for Pacific Fleet Units (class A lab)
- Maintain technical libraries of current technical data for all petroleum products
- Be responsible for an oil pollution control program by maintaining equipment, material, and trained personnel for FLC PH Harbor's Spill Management Team as specified in the PEARL INSTRUCTION 6240.3C Spill Prevention Control and Countermeasure Plan for FLC PH
- Supervise the FLCPH Spill Management Team for oil spill responses and pollution contingencies
- Be responsible for terminal corrective, breakdown, and preventive maintenance
- Review and approve all facility maintenance projects for outside accomplishment by Naval Facilities Engineering Command Hawaii (NAVFACHI) or contractors

1.12.2 Fuel Department Deputy Director

The primary purpose of this position is: to serve as Deputy Director, FLC PH Fuel Department. The incumbent of this position heads the FLC Fuel Operations and Maintenance Divisions, which includes a bulk fuel distribution system to receive, store, transfer, and dispense aviation/ground petroleum and lube oil products. Incumbent plans, supervises and coordinates work operations in the Kuahua (including Red Hill) areas. Furnishes overall supervision to the divisions, and coordinates with activities outside the FLC. Provides operational oversight of supply operations, and provides training, technical guidance and assistance. Expertise is necessary to supervise the operation and maintenance of FLC PH's Fuel Department. The primary responsibility is for directing the organization to develop and implement programs for fuel receipt, storage, and issue, and for material management within guidelines established by the Performance Work Statement. Provides supervisory guidance and advice on regulations and accepted policy. Interprets technical data, maintains and monitors war readiness fuel levels. Additionally, the incumbent provides specialized knowledge of the petroleum industry needed to facilitate long and short range planning.

DUTY 1:

Serves as Fuel Department Deputy Director/Assistant Terminal Superintendent

FLC PH Fuel Department, as a DFSP, is a Defense Energy Support Center stock point, and the incumbent is responsible and accountable for Defense Logistics Agency owned products received, stored, transferred, and issued as outlined in DoD Manual 4140.25-M. The incumbent of this position must adhere to federal, state

and local regulations concerning the operations of a bulk terminal. The incumbent sets overall work priorities for the Operations and Maintenance Divisions, and subordinates schedule day to day operations and maintenance activities in accordance with these priorities. Prevents illegal or unauthorized negotiations or commitment of government funds, monitors and works with contractors. Utilizes knowledge of bulk fuel distribution operation and maintenance policies, requirements, administrative practices, and procedures related to the planning, scheduling, and coordinating of resources for efficient operation. Knowledge and skill in directing the application of bulk fuels management principles, concepts, and methodologies to a variety of conventional and unusual situations. Investigates and resolves problems relative to storage, contamination, transport, safe handling, and makes recommendations for resolution. Reviews standard operating procedures and plans for consistency of safe and efficient operating practices. Coordinates tanker schedules and pipeline movements with Defense Energy Support Center, Camp Smith, HI and on occasion Defense Energy Support Center, Fort Belvoir, VA. Develops short and long-range plans for accomplishment of mission objectives. Conducts feasibility studies and justifies projects for major fund expenditures. Reviews technical plans and specifications for consistency of safe and efficient operating practices. Investigates and resolves problems relative to acquisition, storage, contamination, transport, safe handling, and makes recommendations for resolution. In the absence of the Director, the incumbent serves as senior fuel department representative and is responsible for the day to day operations of FLC Fuels.

Prepares month to month and week to week working schedules to ensure safe mission accomplishment at lowest cost. Determines operational procedures, priorities and goals for review and approval. Issues written pumping orders for major fuel evolutions in accordance with standard procedures. Continuously reviews the fuel storage practices of the facility in order to ensure adequate storage capability, including lines and pumps. Coordinates work effort to ensure an adequate number of qualified operators for each fuel shift and evolution. Revises plans consistent with changing priorities. Compares budgeted expenditures to actual on a monthly basis. Ensures proper actions are taken for the processing of contaminated fuel; i.e. fuel oil recovery, co-mingling, blending, or other actions. Notes variances and take appropriate actions. Provides overall plans for, and through subordinates ensures, the appropriate maintenance of equipment and facilities including preventive maintenance. Schedules and approves priorities to all maintenance work required on buildings, roads, utility systems, drains and grounds of the Fuel Department.

Coordinates Preventive Maintenance (PM).
Assists in the planning and layout of modifications to existing facilities. Conducts quality surveillance and spot checks of maintenance operations. Determines whether in house personnel or contract personnel will perform repair operations. Ensures that oil/water separators, berms, sluice gates, moat, and other drains are in good working order. Reviews planned modifications of equipment and structures. Ensures maintenance is completed and documented correctly. Ensures adequate material is on board for all maintenance/repair work. Assists in the planning and layout of modifications to existing facilities. Conducts quality surveillance of construction and maintenance operations. Reviews planned repairs of equipment and structures. Reviews plans for modification, replacement and or modification of specialized petroleum equipment and construction. Responsible for the maintenance, accuracy and timely updates of FLC Fuel Department's Operations Manual. Ensures the process of identifying, scheduling and completing maintenance requirements is performed in a timely and proper manner.

DUTY 2:
Serves as Fuel Department Deputy Director/Assistant Terminal Superintendent.
Through subordinate supervisors and staff, exercises general supervision, operational oversight, and administrative oversight of the Operations Division and Maintenance Division. This involves some 25 plus employees in general schedule and wage grade categories. These employees range from WG-02/GS-05 to WS-11. The incumbent directly supervises:

- Fuel Distribution Systems Operator Supervisor I – WS-11
- Fuel Distribution Mechanic Supervisor I – WS-09

Additionally, through subordinate supervisors and staff, exercises general administrative oversight of the Technical Division, and the Inventory Control and Budget Division. In this capacity, the incumbent directly supervises:

- One Supervisory Chemist – GS-11
- One Inventory Management Specialist – GS-11

Performs personnel management functions for all Divisions of FLC Fuel Department
Responsible for discipline and performance of subordinate supervisors and employees. Through reports, inspections, discussions with subordinates the incumbent isolates areas where performance does not meet required standards, develops means of correction and implements the changes through subordinate personnel. Where complexities are determined of sufficient scope or nature, the incumbent personally takes corrective action. Designs management systems to ensure operational effectiveness. Approves employee leave and evaluates employee performance. Supports affirmative action and equal opportunity policies. Provides advice and instruction to employees on both work and administrative matters, including career development, performance evaluations, and complaint resolution. Effects minor disciplinary measures, and provides recommendations to the Director for more serious cases. Monitors the performance of contract personnel. Exercises sound judgment in determining priority of tasks to be performed. Attempts to increase the quality of work performed by determining operational procedures, priorities and goals for review and approval by the Director of FLC Fuels. Ensures that adequate material and personnel are on-board for all maintenance/repair work. Develops facility and equipment repair and construction requirements.

DUTY 3:
Supervises a clean-up spill response team made up of existing work force
Acts as Navy On-scene Commander for clean-up of oil spills at FLC Fuels. Commands a cleanup spill response team made up of existing work force. Ensures that adequate oil pollution abatement and oil spill control equipment are on hand and in proper operating condition to respond to an oil spill emergency. Prepares and implements environmental protection and oil spill plans as necessary to comply with DoD instructions, state, federal, and local rules, regulations, and law. Schedules required training/drills, and ensures adequate records are maintained in accordance the Oil Pollution Act (OPA) of 1990. Ensure that all oil spills and unauthorized releases are reported promptly and properly. Ensures that the department's recall bill is current and up to date.

DUTY 4:
Establishes and ensures proper safety practices and procedures are followed
Uses and assures proper fit of required safety equipment (i.e., foot, eye, and ear protective gear) and clothing (i.e., cotton). Ensures appropriate federal, state, and local rules are followed when storing, using, handling, labeling, and disposing of hazardous materials and waste. Ensures all workers consistently operate equipment in a safe manner, applying established safety rules and regulations to minimize minor violations and to avoid major violations due to employee error or negligence. Ensures strict adherence to established safety and security procedures. Promptly reports and corrects any observed or identified violations. Complies with environmental laws and regulations when working with chemicals and disposing of toxic and hazardous waste.

1.12.3 **Supervisory Chemist**

The primary purpose of this position is: to serve as Director, Technical Division, FLC PH Fuel Department. The functions of this division encompass coordinating and maintaining quality control and surveillance of bulk and packaged petroleum products; performing specialized and research testing on petroleum products; conducting inspections to maintain quality surveillance of all fuel products: conducting inspection on petroleum carriers to determine their fitness to transport petroleum products. Provides technical guidance and assistance to Naval Vessels and other government defense agencies official personnel for the resolution of problems related to the field of petroleum, such as ships systems contamination, suitability for use and specification compliance. Performs quantitative measurements of water pollution products and forensic tests

to locate sources of contamination. Quality Surveillance for Fuels, Lubricants, and Related Products, DoD MILSTD 3004 provides major guidance for all facets of the Technical Division.

DUTY 1:

Responsible for the efficient day to day operation of a regional Class A Fuel Laboratory

Operates a regional Class A petroleum laboratory, supervises quality control and surveillance of bulk and packaged petroleum products, including inspection of conveyances. Provides technical expertise in the field of petroleum chemistry to Navy and other DoD customers. Provides reports establishing the probability of contamination sources such as storage, receipt or issue practice of the customer. Recommends acceptance or rejection of products that deviate from procurement specifications, as well as determining substitutability recommendations. Conducts high level tests (primarily Type A and Type B-1) and forensic investigations. Supervises and assists with the maintenance an calibration of selected pieces of laboratory equipment. Ensures completion of quality assurance processes. Ensures technical staff is properly trained. Ensures required testing is completed correctly, in a timely manner and within repeatability and reproducibility limits. Prepares and standardizes reagent solutions for laboratory testing, sets up equipment for new testing methods by constructing the required apparatus from standard or improvised components, undertakes these new methods and determines the most efficient procedure to follow in carrying out these tests. Serves as Confined Space Program Manager and Chemical Hygiene Officer.

Reviews and interprets reports on new test methods collected from the latest scientific literature and instructs other laboratory personnel in the use of these techniques for improving the efficiency of the laboratory. Serves as an instructor of military and civilian personnel assigned to the laboratory for training. Interprets and makes recommendations to military and civilian personnel assigned to Armed Forces installations located within the Middle Pacific area and personnel of the fleet regarding test results of petroleum products and other materials.

Conducts research on problems pertaining to the origin effect of contaminants in the full spectrum of petroleum products, which requires the Supervisory Chemist to apply a thorough knowledge of the laws, concepts, and theories of chemistry and related sciences. Determines appropriate courses of action, method techniques, and sequence of procedures to be followed. Reviews/analyzes results and prepares comprehensive technical reports on data from this research with recommendations for use of the information collected.

Analyzes and evaluates non-petroleum materials such as effluent waters related to the Environmental Protection Agency's pollution control monitoring program, synthetic products, hydrocarbons, alcohol, chemicals, and other materials from various sources. Must provide recommendations for corrective actions when appropriate.

DUTY 2:

Responsible for the efficient day to day operation of a regional Class A Fuel Laboratory

Exercises general supervision and oversight of laboratory and technical support activities of the Fuel Department. This involves 5 full-time employees in several general schedule grade categories. These employees range from GS-05 to GS-09. The incumbent directly supervises:

- One Quality Assurance Specialists GS-9
- Two Physical Science Technicians, GS-7
- One Lab Worker – WG-1

Performs personnel management functions for FLC PH Fuel Department's Technical Division. Responsible for discipline and performance of subordinate employees. Through reports, inspections, discussions with subordinates the incumbent isolates areas where performance does not meet required standards, develops means of correction and implements the changes through subordinate personnel. Where complexities are determined of sufficient scope or nature, the incumbent personally takes corrective action. Designs management systems to ensure operational effectiveness. Approves employee leave and evaluates employee

performance. Supports affirmative action and equal opportunity policies. Provides advice and instruction to employees on both work and administrative matters, including career development, performance evaluations, and complaint resolution. Effects minor disciplinary measures, and provides recommendations to the Deputy Director for more serious cases. Monitors the performance of contract personnel. Exercises sound judgment in determining priority of tasks to be performed. Directs actions taken for the processing of contaminated fuel; i.e.; fuel oil recovery, co-mingling, blending, or other actions. Attempts to increase the quality of work performed by determining operational procedures, priorities and goals for review and approval by the Director of FLC Fuels.

DUTY 3:
Inspects ship cargo tanks, pumps, and pipeline systems to determine suitability for transporting petroleum products

Has the authority for accepting or rejecting the ship. Upon determining ship is unsuitable for intended purpose, recommends suitable cleaning procedures and methods to attain the degree of cleanliness required. Evaluates ship's loading plan and, if acceptable, takes necessary precaution to assure proper segregation of multiple products to prevent contamination or inadvertent discharges. If ship's loading plan is not satisfactory, discusses alternative plans with the ship's representative in order to assure that contamination will not occur. Deals directly with ship's captain, chief mate, or cargo officer during these inspections.

Inspects shore tanks, pipelines, tank trucks, tank trailers, barges, and other storing and transporting media to determine acceptability for intended use. Bases decision of acceptability on knowledge of both military and commercial products involved. When necessary, recommends procedures and degree of additional cleaning required. Has authority to reject any medium due to failure to meet acceptable criteria.

DUTY 4:
Frequently assigned planning and coordinating responsibilities for projects of considerable scope and complexity.

Often called upon to head a team consisting of other divisional personnel to accomplish projects/ assignments. As the team leader, the Supervisory Chemist will coordinate the group's effort and will be responsible for its overall accomplishments.

Monitors operations to prevent the production of defects and to verify adherence to quality plans and requirements. As the Supervisory Chemist, ensures that other specialists adhere to quality plans and requirements.

1.12.4 Operations Supervisor

The primary purpose of this position is: To head the FLC PH Fuel Department's Operations Division which includes a complex bulk fuel distribution system to receive, store, transfer, and dispense aviation/ground petroleum and lube oil products. Incumbent supervises and coordinates work operations in the Kuahua (including Red Hill) areas. Gives specific work assignments to individual workers; reviews work performance in terms of quantity and quality, instructs individual workers, initiates requests for repair of equipment or facilities, provides first line administration of personnel, cost reporting, fire and safety programs, advising supervisors of any difficulties, and coordinates with external customers. Provides operational oversight of fuel operations, provides training, and technical guidance and assistance. Expertise is necessary to supervise the operation of FLC Fuel Department. Works on day shift only but is subject to call 24 hours a day / 7 days a week. Provides supervisory guidance and advice on regulations and accepted policy.

DUTY 1:
Operations Division Supervisor
The incumbent of this position must adhere to federal, state and local regulations concerning the operations of a bulk terminal.

Uses knowledge of bulk fuel distribution operation and maintenance policies, requirements, administrative practices, and procedures related to the planning, scheduling, and coordinating of resources to ensure efficient operation of FLC Fuels. Directs the application of bulk fuels management principles, concepts, and methodologies to a variety of conventional situations.

Ensures compliance with applicable laws, ordinances, and codes (local municipal, county, State, etc.) governing the operation and maintenance of fuel facilities, and hazardous materials rules and regulations applicable to storage, transportation, disposal, and emergency response of fuel products.

Ensures that all training requirements specified in the approved training plan are accomplished. Ensures that all operators are thoroughly trained in safe fuel operations at piers, aboard barges, truck fill stands, ships, and tank farm operations, and are qualified to operate oil/water separator, reclamation plant, small craft, pollution and oil spill abatement equipment, cranes, materials handling equipment, and automated fuel handling equipment (PCE/AFHE/Computers, etc.). Incumbent is the primary contact for all operations problems. Reviews and monitors work performance by analyzing transfer records, shift and work location logs and/or work reports, and on-site inspection. Ensures that nonproductive labor is minimized. Reports to the Fuel Department Deputy Director on status and progress of work, and causes of delay. Responsible for allocating resources and determining necessary planning activities, directing or carrying out assignments, resolving conflicts, and accomplishing work within the framework of standard practices and written procedures. Provides supervisory oversight of fuel operations and preventive maintenance, develops training requirements, and provides technical guidance and assistance; uses technical data, regulations, and accepted policy and provides supervisory level guidance and advice to subordinates; monitors branch operations to ensure compliance with directives and instructions governing stocking, storage, preservation, accounting and reporting of assets. Ensures compliance with environmental law; reviews and prepares for audits and inspections; identifies deficiencies and provides necessary training to ensure all components and records are maintained. Incumbent takes necessary actions to ensure correct and safe operating conditions in all situations. Work is accomplished with little in-progress review. Develops priorities, deadlines, and subordinate work assignments. Attends meetings as required. Completed work is reviewed only in terms of meeting the overall objectives.

Determines priority of tasks to be performed. Monitors the performance of contract personnel. Ensures all operations are carried out in a safe, proper, cost efficient and timely manner. Implements work shift assignments and rotations. Through subordinate staff exercises general supervision in fuel operations and preventive maintenance activities of the Fuel Department. This involves some 20 plus employees in wage grade categories. These employees range from a WG-02 to WG-11. The incumbent directly supervises:

- One Fuel Distribution Systems Leader, WL-11
- Four Fuel Distribution Systems Operators, WG-11
- Five Fuel Distribution Systems Workers, WG-9
- Four Fuel Distribution Systems Workers, WG-7
- Eleven Fuel Distribution Systems Workers, WG-6
- Two Fuel Distribution Systems Workers, WG-4
- One Student Trainee Fuel Distribution Systems Worker, WG-2
- One Cargo Scheduler/Dispatcher, GS-6

DUTY 2:

Develops daily or individual evolution plans for meeting mission objectives

Manages the manpower and material resources and provides the operational expertise necessary to operate and maintain the bulk fuel storage and distribution activities at the FLC PH Fuel Department. Determines operational procedures, priorities and goals for review and approval. Continuously reviews the fuel storage practices of the facility in order to ensure adequate storage capability, including lines and pumps. Coordinates work effort to ensure an adequate number of qualified operators for each evolution. Revises daily plans consistent with changing priorities. Ensures proper actions are taken for the processing of contaminated fuel; i.e., fuel oil recovery, co-mingling, blending, or other actions. Notes variances and takes appropriate actions. Investigates problems relative to storage, contamination, transport, safe handling, and makes recommendations for resolution. Reviews standard operating procedures and plans for consistency of

safe and efficient operating practices. Prepares daily and individual evolution working schedules to ensure safe mission accomplishment at lowest cost.

DUTY 3:
Serves as Operations Section Chief of the FLCPH Spill Management Team
Ensures that adequate oil pollution abatement and oil spill control equipment are on hand and in proper operating condition to respond to an oil spill emergency. Implements environmental protection and oil spill plans as necessary to comply with DoD instructions, state, federal, and local rules, regulations, and law. Ensures adequate OPA '90 records are maintained. Ensure that all oil spills and unauthorized releases are reported promptly. Ensures that recall bill is current and up to date.

DUTY 4:
Provides the appropriate maintenance of equipment and facilities as defined within the approved preventive maintenance plan
Implements scheduled preventive maintenance work required on various facilities and equipment of the Fuel Department. Conducts quality surveillance and spot checks of preventive maintenance operations. Ensures that oil/water separators, berms, sluice gates, moat, and other drains are in good working order. Ensures preventive maintenance is completed and documented correctly. Ensures adequate material is on board for all preventive maintenance work. Ensures that adequate material and personnel are on-board for preventive maintenance work.

DUTY 5:
Performs personnel management functions for the Fuel Department's Operations Division
Responsible for discipline and performance of subordinate employees. Recommends employees for disciplinary action. Through reports, inspections, discussions with subordinates the incumbent isolates areas where performance does not meet required standards, and develops means of correction and implements the changes through subordinate personnel. Where complexities are determined of sufficient scope or nature, the incumbent personally takes corrective action. Inputs and certifies time and attendance. Interviews new employees, plans and schedules appropriate training. Ensures proper employee qualifications and maintains proper documentation of same. Implements management systems to ensure operational effectiveness. Approves employee leave and evaluates employee performance. Provides for proper training, qualification, and performance of subordinates. Supports affirmative action and equal opportunity policies.

DUTY 6:
Utilizes safety practices and procedures following established safety rules and regulations and maintains a safe and clean work environment
Uses and assures proper fit of required safety equipment (i.e., foot, eye, and ear protective gear) and clothing (i.e., cotton). Follows federal and state rules when storing, using, handling, labeling, and disposing of hazardous materials and waste in accordance with environmental standards. Ensures all workers consistently operate equipment in a safe manner, applying established safety rules and regulations to minimize minor violations and to avoid major violations due to employee error or negligence. Strictly adheres to safety and security procedures and regulations and promptly reports any observed or identified violations in accordance with established guidelines. Complies with environmental laws and regulations when working with chemicals and disposing of toxic and hazardous waste.

1.12.5 **Maintenance Supervisor**

The incumbent of this position heads the FLC PH Fuel Department's Maintenance Division which includes a complex bulk fuel distribution system to receive, store, transfer, and dispense aviation/ground petroleum and lube oil products. Incumbent supervises and coordinates maintenance work (including inspection, installation, repair, replacements, and modifications of complex liquid fuel storage and distribution systems and their electrical components) in the Kuahua (including Red Hill) areas. Gives specific work assignments to individual workers; reviews work performance in terms of quantity and quality, instructs individual

workers, initiates requests for repair of equipment or facilities, provides first line administration of personnel, cost reporting, fire and safety programs, advising supervisors of any difficulties, and coordinates with external customers. Provides oversight of fuel facility maintenance, provides training, and technical guidance and assistance. Expertise is necessary to supervise the maintenance activities of FLC PH Fuel Department. Works on day shift only but is subject to call 24 hours a day/7 days a week. Provide supervisory guidance and advice on regulations and accepted policy.

DUTY 1:

Maintenance Division Supervisor

The incumbent of this position must adhere to federal, state and local regulations concerning the maintenance of a bulk terminal. Ensures that all training requirements specified in the approved training plan are accomplished. Ensures that all operators are thoroughly trained in safe fuel maintenance at piers, truck fill stands, and tank farms and are qualified to repair oil/water separator, reclamation plant, small craft, pollution and oil spill abatement equipment, cranes, materials handling equipment, and automated fuel handling equipment (PCE/AFHE/Computers, etc.). Incumbent is the primary contact for all maintenance problems. Reviews and monitors work/performance by analyzing work records/reports, and on-site inspection. Ensures that nonproductive labor is minimized. Reports to the Fuel Distribution Operator Supervisor II on status and progress of work and causes of delay.

Determines priority of tasks to be performed. Monitors the performance of contract personnel. Ensures all maintenance actions are carried out in a safe, proper, cost efficient and timely manner. Through subordinate staff exercises general supervision in fuel corrective, breakdown and preventive maintenance activities of the Fuel Department. The incumbent directly supervises:

- One Welder, WG-10
- One Electronics Mechanic, WG-10
- One Industrial Equipment Mechanic, WG-10
- One Painter, WG-08

DUTY 2:

Develops daily or individual evolution plans for meeting mission objectives

Manages the manpower and material resources and provides the expertise necessary to maintain and repair the FLC PH Fuel Department's bulk fuel storage and distribution facilities. Determines maintenance procedures, priorities and goals for review and approval. Continuously reviews the fuel maintenance practices of the facility in order to ensure ability to meet primary mission. Coordinates work effort to ensure an adequate number of qualified personnel for each evolution. Revises daily plans consistent with changing priorities. Directly supervises subordinate personnel. Investigates problems relative to fuel facility maintenance and makes recommendations for resolution. Reviews standard operating procedures and plans for consistency of safe and efficient operating practices. Prepares daily and individual evolution working schedules ensuring mission accomplishment safely at lowest cost.

DUTY 3:

Inspects, tests and performs all phases of liquid fuel system and component maintenance including preventive maintenance, troubleshooting, repair, and modification

Inspects fuel tanks and vents for proper ventilation. Checks interior and exterior of tanks for corrosion, leakage, contamination, and sludge and correct operation of roof sumps, roof seals, liquid level gauges, product recovery systems, etc., and inspects gauging equipment for calibration. Pressure checks system to identify leaks. Checks pumps for unusual noise, vibration, and proper operation. Performs hydrostatic tests on hoses. Tests and calibrates fuel flow meters, and checks manual and diaphragm valves for proper operation. Conducts diagnostic checks on sensors, alarm components, and emergency shutoffs. Inspects tank cleaning equipment such as portable pumps, respirators, air lines, harnesses, hoses, and compressors. Inspects entire fuel distribution system and components to detect possible explosive and toxic hazards and system deficiencies. Conducts follow-up inspections of contractor and in-house repairs. Maintains records

of inspections, maintenance, and repairs, as required. Removes, installs, repairs, and troubleshoots component parts of complex fuel systems to correct malfunctions of centrifugal, and rotary pumps, manually operated plug/ball valves, hydraulically-operated diaphragm-type valves, motor operated valves, pilot control systems, tank gauges and vents, filter separators, fuel flow meters, riser outlets, differential pressure gauges, and truck loading and fill connections. Performs modification of systems in accordance with applicable manuals, technical publications, and manufacturer's specifications. Corrects pumping equipment misalignment; services filter separators; and checks meters for correct delivery and calibration. Troubleshoots, overhauls, removes, and replaces high/low level controls, liquid level gauges, automatic fueling/defueling valves, pressure regulating valves, water drain valves, excess flow valves, pressure/vacuum vents. Disassembles units and examines component parts for evidence of scratches, wear, cracks, pits, or breaks. Troubleshoots, repairs, and tests equipment installed in truck loading fill stands. Performs liquid calibration of fuel storage tanks and flow meters. Measures, cuts, threads, joins, and fits piping as required to perform system modification or to repair/replace system components. Thoroughly conducts testing of fuel distribution systems and their components to ensure proper operation. Routinely performs inspection of fuel distribution systems and their components to detect possible explosive or toxic hazards and eliminate system deficiencies. Properly documents maintenance, inspection, and repair. Routinely performs preventive maintenance of all systems and components to ensure against unnecessary system downtime. Accurately troubleshoots system problems and performs appropriate repairs. Properly performs system modifications in accordance with directives such as manufacturer's manuals and technical orders. Calibrates fuel dispensing systems and tank and pressure gauges. Evaluates new maintenance methods and makes minor modifications so they are appropriate for the vast array of equipment composing FLC PH Fuel Department.

DUTY 4:
Provides the appropriate maintenance of equipment and facilities as defined within the approved corrective and preventive maintenance plan

Implements scheduled maintenance work required on various facilities and equipment of the Fuel Department. Conducts quality surveillance and spot checks of maintenance actions. Ensures corrective and preventive maintenance is completed and documented correctly. Ensures adequate material is on board for all maintenance work. Ensures that adequate material and personnel are on-board for maintenance work. Decides what maintenance should be accomplished in house and what is sent to NAVFACHI for accomplishment.

DUTY 5:
Performs personnel management functions for the Fuel Department
Responsible for discipline and performance of subordinate employees. Recommends employees for disciplinary action. Through reports, inspections, and discussions with subordinates, the incumbent isolates areas where performance does not meet required standards and develops means of correction and implements the changes through subordinate personnel. Where complexities are determined of sufficient scope or nature, the incumbent personally takes corrective action. Inputs and certifies time and attendance. Interviews new employees, plans and schedules appropriate training. Ensures proper employee qualifications and maintains proper documentation of same. Implements management systems to ensure operational effectiveness. Approves employee leave and evaluates employee performance. Provides for proper training, qualification, and performance of subordinates. Support affirmative action and equal opportunity policies.

DUTY 6:
Utilizes safety practices and procedures following established safety rules and regulations and maintains a safe and clean work environment
Uses and assures proper fit of required safety equipment (i.e., foot, eye, and ear protective gear) and clothing (i.e., cotton). Follows federal and state rules when storing, using, handling, labeling, and disposing of

hazardous materials and waste in accordance with environmental standards. Ensures all workers consistently operate equipment in a safe manner, applying established safety rules and regulations to minimize minor violations and to avoid major violations due to employee error or negligence. Strictly adheres to safety and security procedures and regulations and promptly reports any observed or identified violations in accordance with established guidelines. Complies with environmental laws and regulations when working with chemicals and disposing of toxic and hazardous waste.

DUTY 7:
Performs other duties as assigned

1.12.6 Inventory Management Specialist

This position is located in the Control Division, Fuel Department, Fleet Logistics Center, Pearl Harbor. The position is responsible for inventory control of all DLA and Navy- owned bulk petroleum products received, stored and issued, all budgetary preparation and tracking, all material management, purchasing and requirements determinations and is responsible for all the administrative support functions at the Fuel Department, Control Division, Fleet Logistics Center (FLC), Pearl Harbor. Must be able to obtain a SECRET clearance due to the nature of the work assignments.

This is a KEY position. Incumbent must be removed from his/her military recall status if alternatives for filling the position during an emergency are not available.

DUTY 1:
Incumbent is responsible for maintaining adequate inventories of bulk petroleum products to ensure effective material support
The Inventory management Specialist reviews reports, plans and schedules to forecast usage/requirements, compares stocks on hand with maximum authorized fill levels, determines current and projected available storage, and initiates replenishment action. The incumbent monitors status and effectiveness of supply support, identifies and resolves problems, expedites the acquisition and movement of fuel, and follows up with responsible parties to ensure that necessary actions are taken.

Incumbent maintains liaison with local refineries in the acquisition of fuel, and in the establishment and modification of specific delivery scheduled. Included in this function is the continuing comparison of contract balances and projected requirements with timely notification to higher authority of any projected over/under lift of contract quantities.

Incumbent is responsible for the processing of all automated and manual receipt and issue documents. Ensures that tanker loading and discharge reports and receipt documents are accurately prepared, extended and corrected for temperature variance. Investigates and reconciles any differences between loading and discharge reports which exceed allowable variances, and initiates amendments to orders placed to local suppliers. Monitors the preparation, flow, and distribution of material documents to ensure timely and accurate processing/recording. Documents are coded for Fuel Automated System (FAS) submission and transmitted to the Defense Energy Support Center for final billing to the customer.

DUTY 2:
Incumbent serves as the primary point of contact on matters pertaining to fuel inventories, issues, documentation and logistics control
Maintains liaison with the Sub area Petroleum Office, Hawaii to ensure coordinated action when slated petroleum products are to be supplied by or through FLC PH to meet mid-Pacific island requirements. Coordinates with USN ship supply officers (and Naval Station Port Services barge office in the case of barge issues) to resolve accounting discrepancies based on unmatched invoices received by higher authority. Maintains liaison with U.S. Customs personnel on matters pertaining to the import of fuel from foreign sources, and prepares and distributes necessary documents. Coordinates with higher authority (DLA-E,

USCINCPAC, DLA-E-PAC, and NAVPETOFF) on changes in tank status, both of an emergency and planned nature. Responsible for maintenance of bulk petroleum accountable records for DLA-owned products stored at FLC PH. Ensures that transactions are processed accurately and records are maintained current. Initiates investigations on inventory adjustments to ensure strict accountability of DLA-owned fuel. Ensures that inventory adjustment vouchers and reports of survey are prepared for signature by the designated responsible office and processed in accordance with current service regulations. Prepares operating guidance/instructions to Fuel Department personnel on matters pertaining to the control function. Responsible for the preparation and final submission of all required fuel reports pertaining to stocks, issue data, and replenishment requirements. Develops/maintains departmental key indicators and statistics. Investigates and determines reasons for marked changes in departmental trends and advises the department director.

DUTY 3:

Incumbent is responsible for all facets of departmental budget and execution

Prepares annual budget submission. Monitors and tracks execution of all divisional OPTARs. Tracks budgetary execution and prepares periodic reports for the director and semi-annual Quality Assurance Evaluation. Prepares and consolidates departmental Mid-year and End-of- Year budgetary requests for the department. Determines and develops automated budgetary reports for tracking all areas of financial execution.

Responsible for the purchasing of all material and services for the department. Develops the procedures and workflow for purchase and acquisition of all material and services required for the operation of the fuel department. Develops and maintains various databases and financial control systems to track and purchase materials. Follows all guidelines for credit card management and all other purchasing.

Management of budgets involves Defense Working Capital Funds (DWCF), Navy Working Capital Funds (NWCF), and Operations and Maintenance, Navy Funding (OMN). Funding is provided by two major claimants and involves several cost centers. Funding and budgets must be requested, executed and tracked for all lines of funding and involve both direct and reimbursable funds.

DUTY 4:

Incumbent is responsible for all administrative functions of the department

Routs and prepares of all official correspondence and technical documentation within and the department. Maintains both the electronic and manual central filing systems. Responsible for administrative support to the director, deputy director and staff civil engineer.

DUTY 5:

Establishes priorities and goals for the division and communicates management's policies and strategic objectives

Incumbent supervises:

- One Management Assistant, GS-06
- One Supply Technician, GS-07
- One Supply Technician, GS-06

Incumbent makes assignments depending upon workload and availability of personnel, adjusting and compensating for periods of leave and vacancies. Provides cross training where feasible, thereby creating maximum organizational flexibility. Approves/disapproves leave and certifies time and attendance records. Interviews applicants for existing vacancies, recommends selection of employees, orients/trains new employees, determines employee training needs and schedules training to meet those needs. Resolves complains, grievances and minor disciplinary problems, recommending formal disciplinary actions and advising employees of their rights in these and other personnel matters. Completes performance evaluations, recommends awards and commendations as warranted. Promotes and furthers the Equal Employment

Opportunity (EEO) Program ensuring equal treatment of subordinates in all areas of work and personnel management, including selections, assignments, training, promotions, details, discipline, awards recognition, nominations to boards and committees, overtime assignments, etc. Ensures that all internal policies and practices are consistent with EEO policies and participates in the development of Affirmative Action goals as required.

DUTY 6:
Performs other duties as assigned

1.12.7 Supply Technician

This position is located in the Control Division, Fuel Department, Fleet Logistics Center, Pearl Harbor (FLC PH). The division is responsible for overall inventory management of material supplies for the department. This position is primarily responsible for obtaining required supplies and services for the department through the use of the Government-wide Commercial Purchase Card (GCPC) credit card program. The incumbent will also perform financial and budget duties for the Fuel Department.
The incumbent must be able to obtain a SECRET level security clearance due to the nature of the work assignments.

DUTY 1:
Conducts all purchasing for the fuel department
Receives requests for purchases of supplies or services from department personnel. Searches vendor catalogs or other data sources to locate appropriate sources of supply. Contacts vendors to determine pricing and availability of required material, supplies or services. Provides information to the Purchase Card Approving Official and upon his/her approval, purchases items (not exceeding $2,500) via the GCPC. Follows-up with vendors to maintain records and reports. Documents all purchases placed against the GCPC credit card in accordance with current regulations and instructions. Ensures credit card reconciliations are completed within 5 days and all paperwork is forwarded to the Approving Official (AO) for processing. Reconciles monthly credit card billing statements against purchase card records. Investigates and reconciles routine and recurring discrepancies relating to receipt control, stock control, and inventory adjustments. Tracks and monitors payments by purchase card for purchase orders/contracts awarded by contracting officers for department requirements. As needed, the incumbent will conduct purchase card transactions or interface with the contracting department for all material and service requirements.

Consults and coordinates with Fuel Department key personnel for all material, equipment and service requirements. Ensures key personnel enter all requirements into Fuel Department MAXIMO program accurately. Constantly monitors the MAXIMO program for new requirements. Follows-up on the requirement from start to completion and closure in MAXIMO.

Utilizes the Enterprise Resource Planning (ERP) system to prepare requisitions for material, equipment and services required by Fuel Department. Maintains follow-up actions on the status of requisitions. Ensures completion of requisition in ERP. Utilizes FLC PH intranet web based forms program when ERP cannot provide proper financial document. Ensures "offline" created form is submitted to the appropriate personnel for approval and action.

DUTY 2:
Attends meetings, briefings and trainings associated with the status of work projects and programs. As necessary, presents findings and/or recommendations to resolve problem areas.
DUTY 3:
Performs other duties as assigned

As needed, incumbent will assist Inventory Management Specialist with processing fuel receipt and issue documents. Incumbent will also retrieve confidential messages and process incoming and outgoing mail.

2 General Procedures and Guidelines

2.1 *Site Description*

The facilities include Hotel Pier, Kilo and Mike docks, the Red Hill Tank Storage Area, the Upper Tank Farm Storage Area, the Fuel Oil Reclaimed Facility (FORFAC), and the truck loading/offloading facilities.

2.2 *Plan of Facility*

(An overview map of FLC fuel facilities in Pearl Harbor is located in Section 14.)

2.3 *Size*

The physical layout of FLC PH covers 300 acres of land spread out over Naval Station Pearl Harbor. The major structures of the Fuel Department are located on the northeast side of the base with several miles of pipelines connecting the storage locations with the piers.

2.4 *Terrain*

The terrain at FLC PH is relatively flat with some gently rolling hills. Pearl Harbor contains almost 50 km of shoreline backed by extensive wetlands through which highly sedimented waters enter the harbor. The coastal plains to the west and east of Pearl Harbor, Ewa and Honolulu, lie atop a broad prehistoric coral reef platform. The land areas surrounding Pearl Harbor and Honolulu Harbor are generally low in elevation, slowly rising to 250 ft (76 m) approximately 1.3 nautical miles inland from the harbor. Once 250 ft (76 m) is reached, the terrain slopes rapidly upward east of Pearl Harbor on the west side of the Koolau Range and west of Pearl Harbor on the east side of the Waianae Range. North of Pearl Harbor, the slope is more gradual through the valley separating the two mountain ranges. The valley elevation does not exceed 1,000 ft (305 m) at any point.

2.5 *Major Structures*

The Pearl Harbor bulk fuel facility consists of the following major structures:

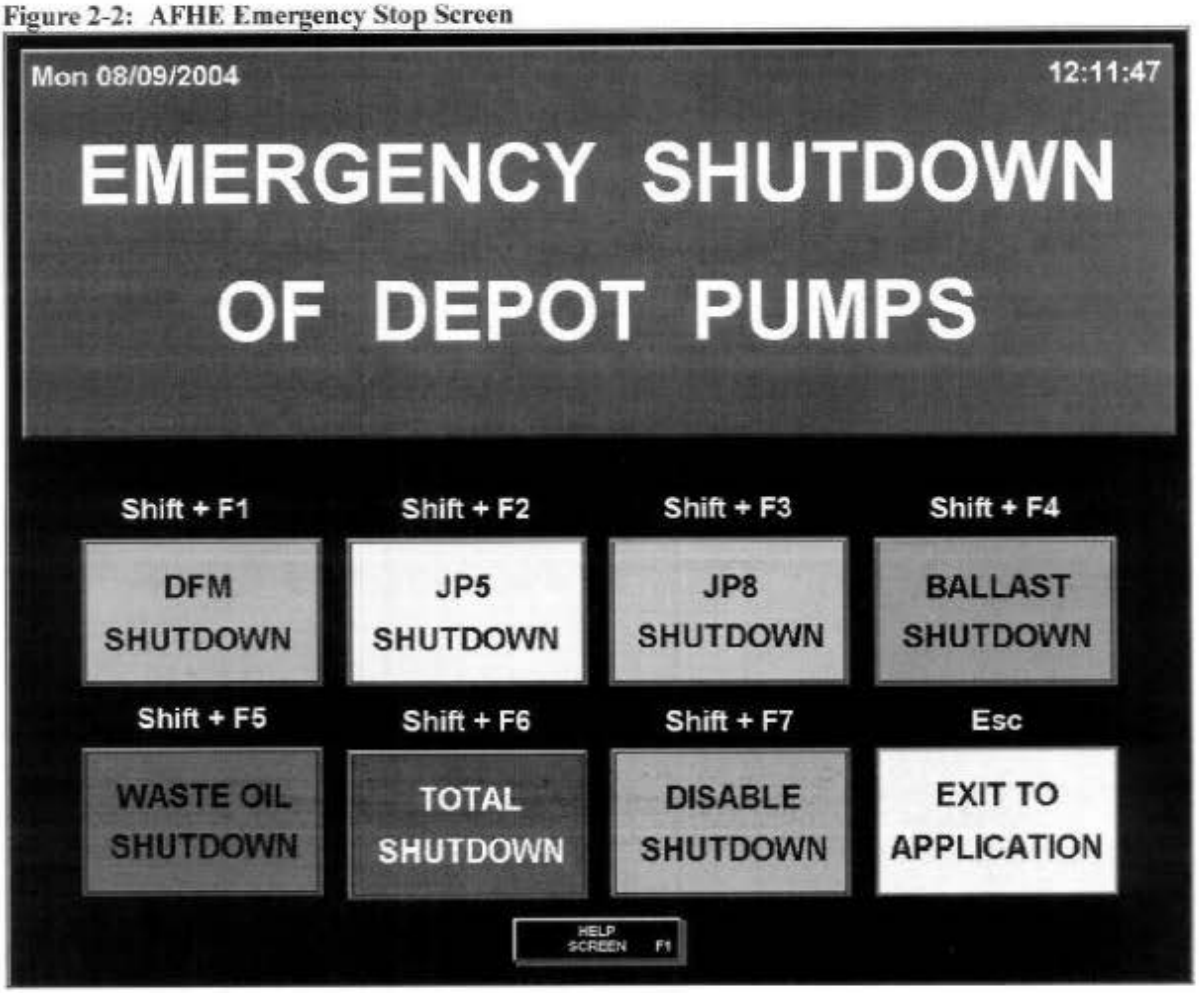
- Red Hill Bulk Storage Complex
- Upper tank Farm Storage Area
- Underground Pump House
- Fuel Oil Reclamation Facility (FORFAC)
- "Hotel" Fuel Pier
- Kuahua Truck Load/Unload Rack
- Building 1757

2.5.1 Red Hill Bulk Storage Complex

The Red Hill Storage Area is located approximately three miles from Joint Base Pearl Harbor- Hickam, in the ridge between south Halawa Valley and Moanalua Valley. The bottoms of the tanks are situated about 100 feet above sea level and about 80 feet above the basal water table. The geology of the site is primarily basaltic lava flows. The Red Hill Storage Area is used to store the majority of fuel at FLC PH and consists of twenty large 302,000 bbl and 4 large 285,500 bbl underground storage tanks (UST) containing JP-5, JP-8, and F-76.

Of special note, Red Hill is one of the world's largest underground storage areas. This unique facility was completed in 1943 to provide strategic location and secure storage for Pearl Harbor's fuel.

Figure 2-2: AFHE Emergency Stop Screen



An Automatic Tank Gauge (ATG) system known as Mass Tank Gauge (MTG) has been installed on all Red Hill fuel tanks and an Electronic Telemetered Gauging Instrument (ETGI) has been installed on Upper tank Farm Tanks. Both systems activate high level alarms if a tank overflow is imminent. If a high-high level alarm is activated, all the tank skin valves have been automated to close The Fuel Department monitors operations and the tank levels via AFHE computers in the Control Room at building 1757 (backup located at the UGPH control station), Fuel Department Operations Supervisor's office and the Truck Loading Rack Office. An audible alarm is located outside at the Fuel Department office building 1757 and Adit 1. All main transfer cargo pumps have been fitted with controls to sense and shut down pumps when high discharge pressures occur.

In addition, the Control Room Operator at 1757 and UGPH have the ability to monitor operational areas through CCTV monitors.

3 Fuel Facility Operational Procedures and Guidelines

3.1 Operations Orders

An Operations Order (OP Orders) is a specific written order for the fuel department to complete a task. This would include delivery of fuel, repair and/or installation of equipment, etc. An Op Order describes the —who, what, where, when and why of a specific operation. There are two types of OP Orders, specific and recurring. All operations orders are incorporated into the FLC Fuel Department MAXIMO computer program. MAXIMO is designed to provide most of the pertinent details needed by the operators. See appendix A for an example.

3.1.1 Specific OP Orders

Specific OP Orders are issued for:

- Receipts and issues to or from ships and other watercraft
- Commercial Pipeline Operations
- Tank to Tank transfers
- Recurring OP orders are written for frequent small issues at:
- Truck load stands (for calibrations of meters)
- Isolated tanks (for preventive maintenance)

OP Orders will be passed on and briefed from shift to shift and posted in appropriate places to ensure all personnel are knowledgeable of the operations.

3.1.2 Specific OP Order Requirements

Specific OP Orders provided with the use of MAXIMO will include, at a minimum, the following information:

- Date & Time of Operation
- Tank Number(s)
- Pier
- Valve Alignment
- Initiating
- Securing
- Fuel Samples
- Type
- Location
- Name of Ship
- Number and Sizes of Hoses
- Telephones and/or Radios Required
- Emergency Procedures & Contacts\

3.2 *Terminal Person in Charge of Waterfront Fuel Operations (TPIC)*

Only qualified and designated persons shall oversee fueling operations. Personnel will only be considered a qualified Terminal Person In Charge (TPIC) once they have completed the FLC PH Harbor Terminal Person in Charge of Waterfront Fuel Operations Training and Qualifications Program, and have been approved by the Fuel Department Director or his/her designated representative.

In accordance with: Title 33--Navigation and Navigable Waters--Coast Guard, Department of Transportation Part 154--Facilities Transferring Oil or Hazardous Material in Bulk, Part 710, Persons in charge: Designation and qualification, (33 CFR §154.710)

Requirements:

1) Training
    a. Overview of Oil Spill Response Plan
        A. FISCPINST 5090.1 series, Oil and Hazardous Substance Contingency Plan
        B. Hawaii Region Red Plan
    b. Minimum of 48 hours of experience
        A. Minimum of 6 connections
        B. Transfer of POL
    c. Minimum of 3 months basic terminal operations
    d. Knowledge of Routine and Emergency Communications Procedures
    e. Drug and Alcohol Training/Awareness
    f. Review Terminal Operations Manual
    g. Spill Training
        A. Classroom
        B. Practical On Scene (Drill)
2) Certification
    a. Review training
        A. FLCPH Fuel Operations Manual
        B. FISCPINST 5090.1 series, Oil and Hazardous Substance Contingency Plan
        C. Hawaii Region Red Plan
    b. Record OJT (PQS)
        A. 48 hours fueling observed by designated OJT mentor
        B. 6 connections observed by designated TPIC mentor
        C. 3 months basic terminal ops
    c. Oral exam of training objectives and general knowledge
    d. 3 year review/recertification

3.3 *Pier Operations*

FLC PH Harbor reserves the right to impose upon any vessel using its docks for any purpose, the regulations stated below covering safe practices for handling petroleum products and prevention of fire hazards.

A minimum of four* qualified FLC Fuel Department personnel will be on duty for all fuel transfer operations:

1. Control Room Operator (WG-11)
2. Terminal Person in Charge (TPIC) Fuel Distribution Service Operator (WG-7/9)
3. Fuel Distribution Service Worker 1 (WG-6/9)
4. Fuel Distribution Service Worker 2 (WG-6/9)

*If fuel is being distributed from the Red Hill Fuel Facility, an additional qualified operator must be present in the Red Hill Control Room

Additional personnel may be assigned as condition warrant.

3.3.1 Pier Operations Safety

The following operating practices and regulations will be followed and strictly adhered to the following general terminal regulations for tank vessels loading and unloading:

- Master or Captain of said vessel shall agree to comply with these regulations and to permit properly assigned terminal personnel to make inspection of his vessel at any time to check compliance with these regulations.
- Shut down of loading or discharging of vessel will occur if vessel personnel violate any of these rules at any time or refuse to correct unsatisfactory conditions promptly.
- The FLC Fuel Department Director or representative has the authority to refuse to load or unload any tank vessel which he considers to be unsafe because of condition, equipment, or conduct of crew. The terminal shall take necessary steps to ensure that fire regulations are being complied with and that unsafe practices are not existent while tank vessels are tied up to the terminal's docks.
- Matches: The only matches allowed aboard ship are safety matches. Cigarette lighters are allowed only in designated smoking areas.
- Smoking Lamp: The smoking lamp is out during cargo transfer and is never lighted on the weather decks.
- Ullage screens MUST remain in place at ALL TIMES during cargo transfer, except for the few seconds required to gage the tanks.
- Firefighting Equipment must be kept ready for instant use.
- Mooring: A secure mooring must be maintained when fuel hose is connected in order to prevent undue strain on the hose. Single lines should be used for mooring; lines should not be doubled. Lines should be so secured that each line may be slacked off or taken in readily as the ship changes draft during loading or discharge. Do not moor with steel cable except in emergencies.
- Hatches and Ports: All hatches leading into the cargo tanks MUST be closed and dogged during cargo handling. All hatches and ports throughout the vessel must also be closed and dogged during transfer operations.
- Hot Work: Not permitted at Hotel pier, Kilo, Mike, or Sierra docks without written approval of the Fire Department and Fuel Department Director. It is never permitted at any pier during fuel cargo handling.
- Warnings Displayed: During cargo transfer, display a red flag (Bravo) by day and an electric red light by night. "NO OPEN LIGHTS" and "NO SMOKING" signs shall be prominently displayed.
- Unless hoses are self grounding, a static bonding cable must be connected before connecting hoses. Connection must be made first on vessel. Disconnect static bonding cable after hoses are disconnected.
- No general cargo shall be loaded or offloaded overhead in the vicinity during hose transfer of any petroleum products.
- Scuppers on the tank deck shall be plugged during operations.
- Do not allow unauthorized visitors on board during cargo transfer and keep the tank deck clear of personnel not engaged in cargo handling.
- No private vehicles on pier unless permitted by pier entry security checkpoint..
- No ammunition handling permitted whatsoever.
- No cargo lifting operations over active pipelines.

STOP TRANSFER OPERATIONS IMMEDIATELY IF ANY OF THE FOLLOWING CONDITIONS EXIST:

- Electrical storm within 5 miles as determined by portable lightning detectors
- High winds
- Cargo spill
- Towboat alongside
- A ship passing close aboard
- DURING ANY EMERGENCY

3.6 *Receipts from Off Base via Refinery Pipeline*

3.6.1 Pipeline Transfer: Schedule of Pumping

Deliveries shall be planned in advance. Every effort shall be made to adhere to the schedule, plus or minus one day. One day prior to the scheduled pumping operation, the specific time shall be arranged by agreement among the following:

- The Quality Assurance Representative (QAR) from Defense Fuel Region Pacific,
- The Navy representative from the Fuel Department
- The representative from the Refinery

3.6.2 Pipeline Transfer: Valve Alignment

To assure isolation of the receiving tank, all valves on the piping system not related to the receiving operation shall be secured by the Navy in advance of taking the opening tank gauge.

The Navy is responsible for operation and proper alignment of all other valves between VS-2A and the receiving tank.

3.7 *Pipeline Transfer F-76*

3.7.1 Pipeline Transfer F-76: Safety Precautions

- Utilize the following personal protective equipment (PPE):
  - Hardhat
  - Safety Shoes
  - Chemical Goggles
  - Gloves
- Utilize lockout/tag out procedures as required.
- Utilize confined space management procedures as required.
- Employ respiratory protection in accordance with the most recent industrial hygiene survey.
- Handle & dispose of hazardous waste and hazardous material in accordance with safety & environmental regulations.
- No smoking, open flames or matches when handling fuel within 200 feet.
- Ground/bond fuel handling equipment and self when required.
- Observe general hygiene procedures after handling fuel.
- Observe all other standard safety procedures before, during and after handling fuel.
- Secure operation if any safety procedures are violated or in the event of a suspected spill.
- Use all spill prevention, control and counter measures (SPCC) required during the operation, i.e., drip pans, absorbents, etc.
- Vacuum trucks are to be empty while parked or parked in secondary containment.
- Person in charge (PIC) is required to ensure USCG requirements for equipment testing are current, i.e., hose testing completed within a year. Ensure communication and operational security is maintained at all times.
- Ensure the operation never exceeds the maximum allowance operating pressure for the pipelines used. Verify ullages exceed receipt amount.

3.7.2 Pipeline Transfer F-76: Materials and Tools

- Sample bottles/cans API tester for VS1A and Red Hill gauger
- Sounding tape
- Absorbent pads rags
- Nitrile gloves

- Respirator
- EEBD (emergency escape breathing device)
- Catch pan/ bucket/ funnel
- Pipe wrench (VS2-A bleed)
- Gauge/sample receipt tank and compare
- Top sounding with AFHE

3.7.3 Pipeline Receipt F-76: Alignment Procedures

- Receipt via the outside 32-inch pipeline into tanks 0113, 0114, 0115, 0116.
- VC1-A open: mov0310a (VS1A-1), 0310b (fire safe) above and before coriolis meter, MOV 0310g (VS1A-5) F-76.
- VC1-A: ensure closed: 3 psi relief PSV02 (before 0310a), AAE (after 310b), PSV03 (after coriolis), 0310f (VS1A-7) F-76 inside, 0310d (vs1a-8) 4-inch line- pumps p-0311 and p-0312 discharge, 0310e (VS1A-4), 0310H (to tank 301), 0310C (VS1A-2) JP-8.
- VC-2A: ensure MOV0393 (twin seal) and MOV0392 (ball valve) are closed.
- Outside man radio or call control room that VC1-A is lined up to pressure test to VC2-A.
- Create/start evolution: pressure test pipeline from receiving tank to VC-2A.
- Open the following valves in the underground pump house.
- 232E4, 232E2, ensure 232E3, and 232E1 are open.
- At VC-1C: ensure valve 0552 is open.
- Ensure that the following sectional valves from the harbor tunnel to red hill are open:
    - 0151(fire control isolation valve)
    - 0152 (Adit 2)
    - 0153 (Adit 3 "y")
    - 0154 (main sump)
    - 0164 (sectional between tanks 0109/0110 and 0111/0112).
- Open only the tank used to pressure test or receiving tank valves.
- Tanks 0113, 0114, 0115, 0116: open 011XE (ball valve), open 25% 011XD (twin seal) and increasing percentages in small increments until pressure at PIT0285 (before butterfly throttle control) has stabilized at tank pressure with valve open 100%.
- Open 18 percent 232T2 (butterfly throttle valve) to equalize line pressure (monitor Pit0421) and then open 232t1 (butterfly throttle valve) increasing percentages in small increments until pit 0421 stabilizes at tank pressure.
- Control room call Kuahua rover to bleed air (pack line) at VC2-A.
- VC2-A: rover will use small pipe wrench to uncap 1"pipe and open 1— (ball valve) vent (bleed) until you get product and secure vent and cap.
- Record pressure PIT0421 and PIT0285 and tank level/volume, test one hour, record pressure from PIT0421, PIT0285 and tank level/volume.
- VC-1A: close mov0310g (VS1A-5) F-76. Secure 232T1 (butterfly throttle valve) and
- 232T2 (butterfly throttle valve). Secure tank valves used to pressurize line.
- Re-gauge tank used to pressure test and pack line and compare with AFHE complete pressure test evolution.
- Create/start receipt evolution.
- VC-2A: open MOV0392 (ball valve) and open MOV0393 (twin seal).
- VC-2A: rover will open access gate to allow refinery personnel to pack and bleed.
- Receipt line to 0391 (twin seal) then refinery personnel open 0391 (twin seal).
- Rover at VC-1A: will take opening coriolis reading and open 0310g (VS1A-5) F-76 and stand by for receipt commencement and take opening F-76 quality control sample/API at sample point (located on F-76 line before 0310g VS1A-5).
- At VC1-C, if using INSIDE line to RH: Open MOV 0553.

- Verify receipt tank opening levels/volumes verify line pressure PIT0285, PIT0421.
- Ensure receipt tank valves are open. Then open valves 232T1 (butterfly throttle control valve) and 232T2 (butterfly throttle control valve).
- Commence F-76 receipt from the refinery to red hill via the 32" pipeline. Monitor flow direction at receipt tank and pressure at PIT0285 & PIT0421, take hourly coriolis and meter interface (AFHE) tank readings, compute receipt amount/balance with refinery.
- Differences of receipt amounts exceeding 150 bbls/hour between the refinery's delivered amounts require temporary secure and verification with top soundings and notification of the chain of command.
- Red Hill gauger and Kuahua rover patrol pipelines regularly throughout shift. Log and exchange with control room coriolis meter readings, pressure and sample/API readings hourly.
- Normal shut down: close 232T1 and 232T2. When harbor tunnel pressure stabilizes
- (PIT0285) secure receipt tank and complete receipt evolution.
- Let tank settle one hour then top gauge/sample and compare with AFHE.
- Monitor PIT 0421 relieve pressure as necessary into surge tank 3 or 4.
- Secure VC1-A and VC2-A task 140, 155 & 300. Secure valves in UGPH task 170.
- Secure VC1-C valves used for inside or outside line to Red Hill.
- VS-1A open the three pressure relief valves (task 145).

3.7.4 Pipeline Transfer F-76: Emergency Procedures

- Immediately call refinery to shut down the operation.
- Secure all operations emergency stop total shutdown.
- Notify chain of command of emergency actions taken and required.
- Control room operator shall notify all essential personnel about emergency situation.

3.8 *Pipeline Transfer JP-8*

3.8.1 Pipeline Transfer JP-8: Safety precautions

- Utilize the following personal protective equipment (PPE):
  - Hardhat
  - Safety shoes
  - Chemical goggles
  - Gloves
- Utilize lockout/tag-out procedures as required.
- Utilize confined space management procedures as required.
- Utilize respiratory protection in accordance with the most recent industrial hygiene survey.
- Handle & dispose of hazardous waste and hazardous material in accordance with safety & environmental regulations.
- No smoking, open flames or matches when handling fuel within 200 feet.
- Ground/bond fuel handling equipment and self when required.
- Observe general hygiene procedures after handling fuel.
- Observe all other standard safety procedures before, during and after handling fuel.
- Secure operation if any safety procedures are violated or in the event of a suspected spill.
- Use all spill prevention, control and counter measures (SPCC) required during the operation, i.e., drip pans, absorbents, etc.
- Ensure the operation never exceeds the maximum allowance operating pressure for the pipelines used. Verify ullages exceed receipt amount.
- Pipeline Transfer JP-8: Materials and tools.
- Sampling containers and devices for VS1A and Red Hill gauger.

- Gauge/sample receipt tank and compare top sounding with AFHE.

3.8.2 Pipeline Transfer JP-8: Alignment procedures

- Receipt via the 16-inch pipeline into tank 0101, 0102, 0103, 0104, 0105 or 0106.
- VS-1A: open: MOV 0310a (VS1A-1), 0310b (fire safe) above and before coriolis meter, MOV 0310C (VS1A-2) JP-8.
- VS-1A: ensure closed:3 psi relief psv02 (before 0310A), AAE (after 310B), psv03 (after coriolis), 1 F-76 line: 0310G(VS1A-5) & 0310D (VS1A-8) 4" line- pumps p-0311 and P-0312 discharge), 0310E(VS1A-4) JP-5 blind), 0310H (to tank 301).
- VS-2A: open MOV0393 (twin seal) and MOV0392 (ball valve).
- VC-1C: open valve 0554.
- Create/start evolution: pressure test pipeline from receiving tank to VC-2A.
- When receipt incorporates a flush to tank 301: pressure test will be to VS-1A valve 0310C (JP-8).
- Open the following valves in the underground Pumphouse; 216E2, 216E3, 216E4, ensure 216E1 is open.
- Ensure that the following sectional valves from the harbor tunnel to red hill are open:
- 0159 (fire control isolation valve)
- 0160 (Adit 2)
- 0161 (Adit 3 "y")
- 0162 (main sump).
- Open only the tank used to pressure test or receiving tank valves.
- Tank0102: open 0102e (ball valve), open 25% 0102d (twin seal) and increasing percentages in small increments until PIT 0301 has stabilized at tank pressure and valve is fully open tanks 0103/0104/0105/0106
- Open 010xc (ball valve), open 25% 010xb (twin seal) and increasing percentages in small increments until PIT 0301 has stabilized at tank pressure and valve is fully open.
- Open a small percent 216t2 (butterfly throttle valve) to equalize line pressure and then open 216t1 (butterfly throttle valve) increasing percentages in small increments until PIT 0423, PIT 1A2, PIT 2A2, PIT 2A1 stabilizes at tank pressure.
- Control room operator, Red Hill gauger and Kuahua rover will monitor line.
- Pressure and check for leaks at flanges low point drains and high point vents.
- Control room operator will call outside rover that VS-1A is lined up to pressure test to VS-2A.
- Kuahua rover will bleed air to pack line at VS-2A high point vent.
- When pressure testing to VS-1A rover will bleed before valve 310c & 310c will be closed.
- VS-2A: open 1 (ball valve) vent bleed until you get product and secure bleed. Monitor PIT 2a2 (VS-2A) and PIT 1a1 (VS-1A) verify that tank pressure has stabilized.
- Monitor pressure PIT 0301, PIT 0423, PIT 1a1, PIT 1a2 and PIT 2a2; and tank level/volume, test one hour, record pressure from PIT 0301, PIT 2a2 and tank level/volume.
- VS-1A: close mov0310c (VS1A-2) JP-8. Secure 216T1 (butterfly throttle valve) and
- 216t2 (butterfly throttle valve). Secure tank valves used to pressurize line.
- Re-gauge receipt tank or tank used to pressure test line and compare with AFHE.
- Complete pressure test evolution.
- Verify last product received.
- When f-76 was last product received create evolution to flush approx. 600 bbls JP-8 from Aiea cage into tank 0301.
- When previous refinery receipt was F-76 VS-1A: ensure closed 0310c (VS1A-2) JP-8.
- Create JP-8 flush evolution: flush refinery Aiea cage to tank 301, previous line API, receipt, interface meter, tank 301.Top gauge tank 0301 ensure ullage exceeds 1000 bbls, if level is below four feet (heel), Control flush flow and pressure with valve 0310h (VS1A-6) until (four feet heel is Obtained) then open 0301H 100%.

- Control room operator will update tank 301 transfer records showing previous closing levels/volumes and current pre-flush top gauge and updated API/temp/factor.
- VS-2A: refinery personnel will pack and bleed refinery line to 0391 (twin seal) then Refinery personnel open 0391 (twin seal). Ensure VS-2A MOV392 (ball valve) & MOV393 (twin Seal) are open.
- VS-1A: FLCPH Lab (704) shall be present and give the acceptance of a heart-cut sample at
- VS-1A (Refinery issue tank API) after a flush of approximately 600 bbls. (monitor interface Meter) interface meter will be used to account for flush into tank 301.
- VS-1A: record coriolis and interface meter reading (opening flush start). Open MOV310A (VS1A-1), 310B & 301C (fire safe). Open: 301b (tank 0301) and flow control valve 310h (VS1A-6) to commence approx. 600bls JP-8 refinery flush into tank 0301.
- **Important:** after at least 400bbls flush into tank 0301; open 310G (F-76 to outside line) at least 10 Seconds to flush at least 2 bbls through the small F-76 section of line into surge tank 3 or 4. Then secure 310G.
- Fuel personnel at VS-1A will install/flush sample tap before valve 310H & initiate sample prior to flush shut down (about 600 bbls) into a 1 gal. Epoxy can (provided by refinery) and a 1 gal. Epoxy can and 1 quart glass bottle (provided by the Fuel Lab). QAR Will check API heart-cut. refinery personnel stop flush.
- DECS QAR will be present when samples are drawn at VS-1A. When DECS QAR samples Meet API requirements (refinery issue tank API) <heart-cut>then secure 0310h (VS1A-6) Record coriolis and interface reading (closing flush end).
- Secure tank 301, 0301b (skin valve). Complete flush evolution <interface meter will be used by DECS & Refinery for flush amount. Update transfer records with tank301 level/volume/ API/temp/factor (interface meter prevails).
- Standby, await call from DECS QAR lab results to begin receipt. Note : exchange interface meter figures to account for flush with QAR.
- Control room operator will create JP-8 evolution: <client> refinery, <API>.
- Refinery issue tank API, <type> receipt, <source> interface meter, <destination> as scheduled receipt tank. Open 0310c (VS-1A2) JP-8.
- Rover at VS-1A: will take opening coriolis reading and stand by for receipt Commencement and take opening JP-8 quality control sample/API at sample point (located after JP-8 valve 0310c).
- Verify receipt tank opening levels/volumes verify line pressure has not decreased (PIT
- 0301 PIT 0423). Open receipt tank valves. Then open valves 216T1 (butterfly throttle
- Control valve) and 216T2 (butterfly throttle control valve).
- VC1-C: Using INSIDE line to Red Hill, OPEN MOV 0555. Using OUTSIDE line to Red Hill, OPEN MOV 0554.
- Commence JP-8 receipt. Monitor flow direction at receipt tank and pressure at
- PIT 0301 & PIT 2AL, PIT 2A2, PIT 1A1, PIT 1A2, take hourly interface & coriolis meter readings; and tank readings, compute receipt amount/balance with refinery.
- Differences of receipt amounts exceeding 150 bbls/hour between refinery delivered amount require temporary secure and verification with top soundings and notification of the chain of command.
- Red Hill gauger and Kuahua rover patrol pipelines regularly throughout shift. Log pressure and sample/ API readings hourly and if required exchange with control room coriolis meter readings.
- Normal shut down: close 216T1 and 216T2. When harbor tunnel pressure stabilizes (PIT 0301). Secure receipt tank valves and complete receipt evolution.
- Receipt tank: let tank settle then top gauge/sample. Purge sample taps and take 6 quarts of all level samples. Compare top gauge with AFHE. Update transfer records. Exchange figures with DECS.
- Red Hill main sump and waste oil recovery tank 311: Red Hill gauger must monitor main Sump and waste oil recovery tank 311 anytime samples lines are opened. Assure that Sump pumps when levels rise above actuation set points and top gauge tank 311 & log tank 311: high level alarm 12'-3".

- Monitor PIT 0423, PIT 2A1, PIT 2A2, PIT 1A1, PIT 1A2 relieve pressure as necessary into surge Tank 1.
- Caution: before relieving pressure between VS-2A & VS-1A into tank 301 ensure JP-8 valve 310C closed.
- Relieve pressure: create/start evolution, as necessary open 216ES and 0221A (surge tank 1). Secure tank valve 0221A and 216ES. Record and update level/volume changes on transfer records. Complete evolution.
- Secure VS-1A and VS-2A task 140, 155 & 298. Secure valves in UGPH TASK 170.
- Secure VC1-C valves that were open for Receipt.
- VS-1A open the three pressure relief valves.

3.8.3 Pipeline Transfer JP-8: Emergency procedures

- Immediately call Refinery pump room at 99-547-3234 to shut down the operation.
- Secure all operations emergency stop total shutdown.
- Notify chain of command of emergency actions taken and required.
- Control room operator shall notify all essential personnel about emergency situation.

3.8.4 Pipeline Receipt JP-8: Sampling, Gauging, and Pumping Operations

As indicated in Section 6, all level samples of product shall be taken from the receiving tank prior to the beginning of operations. A minimum of 6 quarts is required. The sample shall be submitted to the Fuel Lab for reference.

Refinery will pump the product into the pipeline and complete a line pack test and pressure check of the line to Aiea Junction not more than three hours before beginning shipment.

Protective devices are installed on the Chevron piping tie-in at Aiea Junction. These devices are designed to protect the Navy piping system against excessive pressure buildups, and consist in the telemetered pressure signal from the junction to the refinery, high pressure alarm, and high pressure shutdown. When the pressure at Aiea Junction reaches 225 psi, the pump will automatically shut down. The Navy will not receive product unless the protective devices are in working order throughout the entire time of transfer. Before the start of receiving operations, the
QAR shall ascertain that the alarm and the automatic shutdown are functioning within 10 psi of 225 psi.

After all valves have been aligned and opened, the Navy representative at UG Pump House shall advise the refinery representative at Aiea cage who communicates with the refinery pump room.
When the QAR approves the beginning of the operation, the refinery representative shall notify the refinery to start pumping at a slow rate.

After pumping has started, the Operations (703) shall take line samples in VS1A or UGPH. As indicated in Section 6, an initial 1 quart line sample must be taken and submitted to the Fuel Lab. In addition, a composite of 16-ounce (½-quart) line samples will be taken within the initial minute after start and hourly thereafter. Be sure to visually inspect for the presence of sediment or water and any irregularities. The sample shall be submitted to the Fuel Lab for reference. The QAR and the refinery shall also take samples as they deem necessary.

The refinery and the Control Room Operator shall take meter interface and MTG readings of their respective tanks at the beginning of the operation. Gross readings for running gauges shall also be taken on the hour every hour during the entire time of the operation.

The Control Room Operator shall inform the refinery of the amount in barrels received during the preceding full hour. The refinery shall exchange similar information with the Control Room Operator and shall compare data for any unusual discrepancy. All gauges shall be recorded by the Control Room Operator on Gauge Record, Form 14ND-NSC-60-4440/13.

If variance between the pumper and receiver is excessive, all operations shall cease until the cause is determined and corrected. For unexplained quantity differences, the decision to shut down shall be mutually arranged between the refinery and the receiver, probably at the time the hourly gauge information is exchanged. For quality deviations, the decision to shut down will normally be made by QAR or the refinery based upon their samples.

At the routine completion of an operation, the order to discontinue shall be given by the QAR or the refinery quality coordinator, after coordination with the pumper and receiver concerning gauge and pumping rate calculations. A minimum advance notice of 15 minutes shall be used for actual shutdown. To prevent the transfer of the pipeline interface at the time of shutdown, the refinery shall leave at least 500 barrels of product in the line between the junction and the interface.

At the cessation of pumping, the refinery representative shall close the valve at Aiea Junction and VS-2A, and the Operations (703) shall close the Navy's valves in VS-1A and on the line to the receiving tank. All lines shall be secured.

Final MTG readings, corrected to 60 degrees F, shall be taken by the refinery and at the Upper Tank Farm or Red Hill underground storage. Quantity determinations are based on data from the Navy's receiving tanks as accepted by the QAR. The QAR shall arrange for preparation and proper distribution of the DD Form 250.

Two quarts each level of product shall be taken from the receiving tank upon completion of the operation. The sample size shall be 1½ gallons. The sample shall be forwarded immediately to Fuel Lab for analysis. The analysis must be completed and indicate the product is within specification before any issues can be made from the tank(s).

3.8.5 Pipeline Transfer JP-8: Duties of Personnel Assigned

OP Orders will be prepared by the Operations Supervisor and approved by the Deputy Director utilizing the Transfer OP Order form found in Appendix F. Upon receipt of his/her signature, one copy will be distributed to the Operations Supervisor and Leader. The Operations Supervisor will determine which tank(s) the fuel will be received into. The Control Room Operator will determine the proper valve alignment.

The MTG gauge readings, water cuts, and temperature from the receipt tank(s) will be entered into the log books by the Control Room Operator. Prior to commencing the fuel transfer, all entries in the log books must be completed by the Control Room Operator. The leader is responsible for all actions in the tank farm area and will assign specific duties to the FDSWs. The leader or shift supervisor is also responsible for monitoring the pipeline from the point where the pipelines enters the base to the receipt tank(s).

3.8.6 Pipeline Transfer JP-8: Emergency Shutdown Procedures

If the Navy requires an emergency shutdown of operations, the Control Room Operator should request the refinery to secure their pump before closing any of the Navy valves. In case of a breakdown in communications between the Navy and the refinery, or if the nature of the emergency dictates an immediate shutdown, the Navy should secure Refinery's 6-inch valve in Valve Chamber No. 1. The valve should be secured slowly. In extreme emergency, the Navy may secure any Navy valve against the refinery pumping. Again, care must be taken to secure the valve slowly.

3.8.7 Pipeline Transfer JP-8: Safety

All personnel are required to wear appropriate personnel protective equipment (PPE) whenever handling fuel or entering confined spaces. Examples are coveralls, rubber gloves, safety glasses, safety shoes, and hard hats.

During all transfer operations, safety must be of paramount concern. The FDSWs must be familiar with JP8 MSDS for safe handling of the fuel. Specifically for pipeline transfer operations, the following safety measures must also be executed by Fuel Department Personnel:

- Ensure fire-fighting equipment is operational.
- Smoking is only permitted in designated areas.
- Maintain communication between the pipeline representative and the Control Room Operator.
- Stop all operations in the event of an electrical storm within 5 miles.
- Inspect the pipeline when transfer begins and every hour thereafter.

3.8.8 Pipeline Transfer JP-8: Quality Surveillance

The QAR shall determine the quality of the product and inform the receiving agency and the refinery whether or not the product is acceptable for delivery. The QAR shall also determine that the Navy receives a "heart cut" by observing the positions of the sphere detectors in the pipeline at Aica Junction.

3.9 *Issues from Red Hill Underground Storage Tanks*

Issues are normally made by gravity flow from the Red Hill tanks. There are is an adequate flow rate available from the head pressure in the tanks.

When making issues from the Red Hill tanks, the head pressure from the tanks plus the increased pressure from the underground pumps will be greater than the maximum allowable working pressures (MAWP) for the pipelines. Issue operations utilizing the Red Hill pumps will only be done with the direct approval of the Fuel Director or the Deputy Fuel Director.

3.9.1 Issues from Red Hill Tanks via Gravity Flow

On all issues from tanks to docks the fuel flows through the Underground Pump House. When the Control Room Operator establishes the valve line-up, and will keep the pressure control valve located below the throttle valve closed. After all the valves are lined up to the docks, open the pressure control valve slowly until the desired pressure is obtained. When fueling is finished, close the control valve and release the pressure from the line into the surge tanks.

When fueling by gravity flow and a pump is needed, continue fueling and set suction to the outside line. Open the discharge to the inside line and start the pump with the pump discharge valve closed. Open valve slowly until the pressure builds up to about 100 psi. Regulate the pressure with the bypass valve.

3.9.2 Issues from Red Hill Tanks with Pumps

Steps to Follow Prior to Operating Underground Pumps No. 1 to 11:

1. Open all necessary valves from the source to the pump, to the destination, except for the pump discharge valve.
2. Check the oil for the pump motor bearings by visually inspecting two oil cups. Add oil if necessary.
3. Check the oil for the front and rear pump bearings by visually inspecting the level in the two sight glasses. Add oil up to the level mark if necessary. The oil level should not be higher than the center of the lower balls of each bearing.
4. Open the ¾-inch oil line that leads to the mechanical seals. This line runs from the pump discharge line through a pressure reducing valve (set at 40 psi) back to the mechanical seals.

5. Open the water cooling system to the pump.
6. Fill the suction line and the pump casing with fuel and bleed the air out of the pump using vent valves on top of pump casing.
7. Inform Control Station and ensure you have a good bypass
8. Start pump.
9. The OCV valve will open and equalize pressure flow regulated by the bypass and discharge valve.
10. Adjust the flow of cooling water so that it is cool to the touch as it leaves the pump.
11. Never throttle the pump by using a valve on the suction side of the pump.
12. Secure pump.
13. Pressing stop button engages closing mechanism on the OCV valve. (NOTE: this is NOT an immediate process and takes approximately five minutes to fully close.) Pump stop occurs when OCV completely closes. Close all necessary valves from the source to the pump to the destination.

3.9.3 Tank to Tank Transfer Operations: Hickam Airfield

Scheduled transfers will be confirmed with issuing and receiving activities a reasonable time in advance regarding kind of product, estimated quantity, times for starting and stopping, and all other pertinent data.

After operating details have been cleared, the receiver will notify the Control Room Operator approximately 15 minutes before the predetermined starting time that the receiver is prepared in every way to receive jet fuel. The Control Room Operator will ensure that the FDSW ensures line valves are properly lined up for the operation. Transfers may then be started at the scheduled time, with notice being given to the receiver that the transfer has been started.

Each activity will gauge on the hour every hour during the entire time of operations. The receiver will inform the Control Room Operator on or before the half hour the amount, in barrels, received during the preceding full hour. The Control Room Operator will log the amount, in barrels, issued for the corresponding hour as indicated by gauge. Any variation from the normal or expected shall be checked between the two activities. If no proper explanation can be found for major differences in the amounts, the activities must shut down until the cause of the excessive variation in amounts has been satisfactorily determined or properly corrected. If the receiver does not contact the Control Room Operator within 45 minutes after the hour of operation, the Control Room Operator will attempt to contact the receiver. In the event the Control Room Operator is unable to contact a responsible agent of the receiver, the Control Room Operator will secure and the transfer will remain suspended until the receiver requests that that the transfer be resumed.

If, in determination of hourly gauges by the receiver, it is indicated that the transfer operation will be completed prior to the time for the next hourly gauge, the Control Room Operator will be notified to stand by for shutdown notification to be given the receiver. The Control Room Operator will notify the receiving activity when pumps and valves have been secured. The Control Room Operator will then notify the proper authority that the operation is completed.

No transfer operations will be made without adequate communication between Control Room Operator and receiver. In case telephones are not available or not in working order, arrangements must be made for use of radio communication.

Start pumps P-141 and P-1412 in JP8 pump house in parallel.

Watch header pressure closely at the start of pumping operation. If normal operating pressure is not attained in five minutes, shut down and ascertain cause. If during a pumping operation an unexplained change in pressure occurs, shut down until cause is determined.

Ascertain that water cooling system on pumps is functioning properly on bearings and packing glands.

Keep all objects, rags, clothes, etc., away from motor cooling fan inlets. Any impediment in the air stream will result in serious damage to motor and is an extreme fire hazard.

Secure pumps P-141 and P-1412 in JP8 pump house.

All transfer operations and gauging will be secured during an electrical storm that is within 5 miles.

3.9.4 Tank to Tank Transfer Operation: From Red Hill Tanks to the UTF

F-76, JP-5, and JP-8 are transferred from the Red Hill Tanks to the Upper Tank Farm tanks on a frequent basis to facilitate the simultaneous fueling evolutions conducted at the various docks.

3.9.5 Tank to Tank Transfer Operation: Duties of Personnel Assigned

When the Upper Tank Farm tanks warrant refilling, the Operations Supervisor will determine from which tank(s) fuel will be issued. The Control Room Operator will determine the proper valve alignment.

The MTG gauge readings, top gauge, water cuts, and temperature from the issue and receipt tank(s) will be entered onto the log books by the Control Room Operator prior to commencing the fuel transfer. The leader is responsible for all actions in the tank farm areas and will assign specific duties to the FDSWs. The leader is also responsible for monitoring the pipeline from the issue tank to the receipt tank.

Once valves have been properly aligned and the Fuel Department personnel are ready to commence the transfer, the FDSW will monitor the receipt tank valves and the Control Room Operator will start the transfer. The FDSW will verify that fuel is being received into the tank and observe pressure gauge for readings indicating the transfer operation is normal.

If at any time during the transfer operation direct communications are lost between the Control Room Operator and the receipt tank watch, secure the transfer operation until communications can be re-established. Notify the Operations Supervisor and make a log entry of any shutdown.

When the Control Room Operator determines that there are fifteen minutes left before the tank is full, notify the receipt tank watch to standby as the Control Room Operator secures flow.

The Control Room Operator will regulate throttle valves to ensure that the line pressure will remain constant until the operation is secured.

3.9.6 Tank To Tank Transfer Operation: Emergency Shutdown Procedures

In the event that an emergency occurs, the operators must be able to react quickly and properly to place the pipeline systems in as safe a mode as possible. This requires the operators to:

- Contact the Control Room Operator by radio to secure the transfer immediately.
- Once the transfer has been stopped, the Control Room operator will shut the tank receipt valves.
- Inform supervisor immediately of the situation.

3.9.7 Tank to Tank Transfer Operation: Safety

All personnel are required to wear appropriate personnel protective equipment (PPE) whenever handling fuel or entering confined spaces. Examples are coveralls, rubber gloves, safety glasses, safety shoes, and hard hats.

During all transfer operations, safety must be of paramount concern. The FDSWs must be familiar with the F-76, JP-5, and JP-8 MSDS sheets for the safe handling of the fuel. Specifically for tank to tank transfer operations, the following safety measures must also be executed by Fuel Department Personnel:

- Ensure fire-fighting equipment is operational.
- Smoking is permitted only in designated areas.
- Maintain communication between the receipt tank and pump operator.
- Stop all operations in the event of an electrical storm within 5 miles.
- Inspect the pipeline when loading begins and every hour thereafter.

3.9.8 Tank To Tank Transfer Operation: Quality Surveillance.

A line sample is drawn and approved ten minutes into the fueling operation to ensure the fuel is clear and bright. It will then be stored for 90 days.

Follow these safety guidelines:

- Utilize Lookout/Tag out procedures as required.
- Utilize confined space management procedures as required.
- Employ respiratory protection in accordance with the most recent Industrial
- Hygiene survey.
- Handle & dispose of hazardous waste and hazardous material in accordance with
- Safety & Environmental Regulations.
- No smoking, open flames or matches when handling fuel.
- Ground/Bond fuel handling equipment and self when required.
- Observe general hygiene procedures after handling fuel.
- Observe all other standard safety procedures before, during and after handling fuel.

3.9.9 Tank to Tank Transfer Operation: Circulation of JP5 from RH to UTF Procedures

Open the motorized twin seal valve and the motorized ball valve of the tank to be used for circulation purposes as designated by the Supervisor.

Ensure that the following sectional valves on the 18inch pipeline in the Red Hill, Harbor and Yard Tunnel are opened in the following order:

1. 0163 (If using Tanks No. 0111, 0112, 0117, 0118, or 0120)
2. 0158
3. 0157
4. 0156
5. 0155 (Fire Control Isolation Valve) is open.
6. Open the following valves in the Underground Pumphouse.
7. 218T1 or/both 218T2 (Pressure Control Valve. This valve will be opened last when commencing circulation and first when securing same).
8. 218E4
9. 218E3
10. 218E2
11. 218E1
12. Ensure that Valve No. 218ES and 218IS are closed.
13. Ensure that Valve No. 218E1 (Fire Control Isolation Valve) is open.
14. Ensure that Valve No. 0222A (Surge Tank No. 0222) is closed.
15. 0570
16. 0705
17. Ensure that Valve No. 0704 (VS-3) is Closed
18. Open the following sectional valves on Hotel Docks:
19. 0837
20. 0870
21. 0904
22. Open the Following Valves in VS-3
23. 0712
24. 0573
25. 0404
26. Open Valve No. 1406A (Tank No. 55)

Pipeline alignment is now complete from Red Hill JP-5 to Upper Tank Farm Tank No. 55 via Hotel Dock. Commence circulating 3,000 bbls.

After dock pressure is released, secure valves in reverse order.

4.3.4 Line Stripping

Should the need arise to empty a major pipeline; it can be done utilizing the pumps located in Underground Pump House Valve. The fuel will be pumped from the pipeline into the appropriate tank at either the Upper Tank Farm or the Surge Tanks. As in all other fuel transfer operations, care must be taken to ensure that the valve line-up is properly completed and that the receipt tank has sufficient ullage to receive the product.

When ready to commence the stripping operation, the pump should be turned on, and a high point vent or header must be opened to allow air into the pipeline. Otherwise, the pump will draw a vacuum and not be able to remove any product from the line.

4.4 *Tank Inspections*

4.4.1 External Inspections

The exterior of all tanks will be inspected daily for obvious signs of spills and leaks.

4.4.2 Internal Inspections

Fuel storage tanks require internal tank inspections in accordance with MO-230. Bulk tanks will have the inspections conducted by an API 653 certified inspector. All shop fabricated tanks, including the two lube oil tanks require integrity inspections in accordance with Steel Tank Institute Standard SP001-03, —Standard for Inspection of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids.

4.5 *Tank Gauging*

Gauging is a process of measuring height of a liquid in a storage tank usually using a weighted graduated steel tape and bob. This section describes the procedures to be followed to ensure accuracy in measuring the amount of fuel involved in all inventories, transfers, receipts and deliveries. Gauging is one of the most important operations in any transfer of products. It is the mechanical measurement of the product surface above the tank bottom, the depth of water on the tank bottom (water cut), and the product temperature. Gauging a tank may be used to determine or verify:

- Present stock position
- Large product movements are proceeding according to plan
- Receipt or issue quantities
- The existence of leaks in tanks

The type of gauging most common and applicable for shore tanks is the innage gauge. The innage is the height of the liquid surface from the bottom of the tank. The innage is obtained by subtracting the measured distance between the surface of the liquid in the tank and the reference point from the official reference height of the tank.

Utmost care must be taken in securing accurate gauges and temperatures and in completing reports and records as required.

Only gauging tapes that have been checked by a supervisor shall be used. Turn in all faulty equipment to the supervisor for repair and/or replacement.

4.5.1 Determining the Total Volume in the Tank

To gauge a storage tank:

1. Select an innage tape and bob (innage bob is pointed).
2. Gauge all tanks from the reference gauge mark established at the top of the gauge hatch.
3. Check the overall height measurement (distance between gauge mark and bottom) as stenciled on tank and start the gauge tape into the tank in a careful manner.
4. Lower the bob slowly for the last several feet to the bottom to permit feeling the touch of the bob against the tank bottom. Lower the tape and bob into the tank until the tip of the bob barely touches the bottom of the tank.
5. If the gauge tape reading does not agree with the overall height within 1/8inch, raise the tape and lower to the bottom again.
6. If the difference continues to show, proceed to gauge by outage method and report difference in gauge book.
7. Retrieve the bob while observing where the tape becomes wet with fuel.
8. Wipe off fuel about six inches on either side of that point and note where that point is located.
9. Continue retrieving the tape while wiping off fuel and when water is present, apply a thin film of water-finding paste on the bob.
10. Lower bob into fuel until the point on the tape is reached where the tape became wet during previous gauging.
11. Apply a thin film of fuel-finding paste to the tape in a continuous strip about four inches above and below the expected product cut.
12. Lower the tape and bob into the tank until the tip of the bob barely touches the tank bottom.
13. Allow the tape and bob to remain in this position long enough for the fuel-finding and water-finding paste to react.
14. Reel in the tape to the oil mark, read to the nearest 1/8inch and record in gauge book.
15. Continue to reel tape in and read water gauge to nearest 1/8inch and record in gauge book.
16. Repeat gauging until at least two successive gauges show the same fuel cut and water cut.
17. Observe time to nearest minute and record in gauge book.
18. Close gauge hatch.

4.5.2 Gauging Red Hill Tanks

Due to the size of the tanks within the Red Hill Facility, a different process is required using ullage type gauging. Ullage is used to describe the empty space in large tanks. The ullage gauge is the distance from the surface of the product to a reference mark at the top of the tank. The following steps shall be followed while gauging Red Hill tanks:

1. Each Red Hill tank is slightly different, therefore, prior to conducting any gauging, the tank reference point (i.e. the distance from a set point in the gauging hatch to the bottom of the tank) must be known
2. Contact the control room and get the AFHE gauge (i.e. the amount of product in the tank according to the AFHE system)
3. Subtract the AFHE gauge distance from the reference point distance. This will indicate how deep the surface of the product within the tank should be
4. Apply a thin layer of fuel indicating paste to the bottom three feet of sounding tape
5. Lower sounding tape to the distance indicated by the AFHE plus two more feet and note that distance as the raw gauging depth
6. Use the length of discolored paste on the tape to determine how much of the tape was below the surface of the product (known as the "cut") and subtract that amount from the raw gauging depth. This will be the actual distance from the reference measurement point to the surface of the product. Subtract that from the reference point to determine the manual gauge of product.

7. Compare the manual gauging to the AFHE gauging. There must be no more than a 3/16th of an inch discrepancy between the two figures

4.5.3 Timing of Gauges

Gauges are taken as soon as possible after receipt or issue of product. However, sufficient time should be allowed for settling, air expulsion, etc., after deliveries to the tank. The tank should not be gauged when there is evidence of air expulsion (noted by air bubbles breaking at the surface of the product). If there is foam on the surface, the tank should be allowed to stand at least one hour to allow the product to settle before the closing gauge is taken. Extreme care must be exercised when handling low-flash products such JP-8.

4.5.4 Static Electricity

Before gauging a tank, ground personnel must ground themselves and the gauge tape against any static electricity by touching some metallic portion of the tank, such as the handrail before opening the hatch. Always gauge a tank from the windward side of the hatch to prevent inhalation of vapors. Never gauge tanks during electrical storms and never wear any clothing such as nylon that will generate static electricity. Always keep the tape in contact with the metal edge of the gauging hatch until the bob is below the surface of the product.

4.5.5 Determining Bottom Sediment and Water (Water Cut)

From a quality and quantity standpoint, it is imperative that fuel be kept as water free as possible. Free water in fuel (especially jet fuel) causes erratic gauge readings, fuel-system component corrosion, fuel-system icing, and more frequent replacement of filters. Any water found in tank bottoms must be subtracted from the total innage to prevent overstatement of actual inventory.
To determine the water cut:

1. A gauge tape and bob are coated on one side with a thin, even film of water- finding paste.
2. The bob is then lowered through the gauging hatch until the tip of the bob barely touches the bottom of the tank. The product cut and the water cut are usually taken simultaneously using the same tape and bob.
3. Approximately 10 seconds reaction time is normally allowed for gasoline and kerosene base products and 30 to 60 seconds for heavier products.
4. The distance from the tip of the bob to the –cut is measured and recorded as –water innage.
5. Water checks must be made daily on working tanks and monthly on non-working tanks or each time a tank is gauged, whichever occurs first.

4.5.6 Gauging Equipment

The following equipment is required to accurately gauge fuel tanks:

- Innage Tape and Bob 75inch
- Innage Tape and Bob 50'
- Innage Tape and Bob 25'
- Water Indicating
- Water Indicating Paste
- Fuel Indicating Paste
- Cup Case Thermometer

4.5.7 Gauging Safety Procedures

When gauging a tank:

- Two people will always gauge tanks together.
- Gauge through the gauge hatch only and hold open no longer than necessary to obtain gauge.
- Do not open the gauge hatch until you have rested long enough to restore breathing to normal.

- Avoid inhaling tank vapors. Always stand to the windward side of an open hatch. Use a gas mask if conditions warrant.
- Do not descend upon the roof of a floating roof tank unless in sight of a second person stationed at the top of the stairway.
- To eliminate slipping and falling hazards:
- Avoid oil spills on tank platforms and stairways. If a spill occurs, clean it up immediately.
- Remove any broken bottles from walkways or tank stairways and place in trash containers.
- On tanks having ladders, face the ladder when using it. Keep both hands free when using ladders and avoid carrying any object that will interfere with their use.
- To avoid ignition hazards:
- Ground your body and the gauge tape by touching the stair rail or tank shell with your bare hand and with the tape reel when approaching the top of tank and before opening the gauge hatch.
- Keep the gauge tape in contact with the tank throughout the gauging operation.
- Do not gauge tanks that are in a state of extreme agitation.
- Remove any oily rags from the tank roofs to covered metal receptacles.

4.6 *Temperature Measurements*

Temperature measurements are taken almost without exception whenever gauges are taken for accounting purposes, to determine inventory on hand, product received, or product delivered. Petroleum products expand and contract significantly depending on their temperature and API gravity.

To minimize the effects of volumetric change due to thermal differences at the point of loading and the point of delivery, all volumes are corrected from the observed temperature to their –corrected volume at 60 degrees F. A volume correction will be made on each individual bulk issue or receipt of petroleum product of 3,500 gallons or more. Current ASTM tables for the correction of API and volume to 60 degrees F will require using Table 5B, (API correction to 60 degrees F); and Table 6B, (Correction of volume to 60 degrees against API gravity at 60 degrees F). For further information, see Table 8 of ASTM-D1250 Petroleum Measurement Tables, Fundamentals of Petroleum, NAVEDTRA 10883-B Chapter 6, and NAVSUP Manual, Volume II. A standard cup thermometer, 0 degrees to 150 degrees Fahrenheit range, marked to 1 degree Fahrenheit divisions on the glass, with an open metal oil cup of about 100cc capacity surrounding the bulb will be used. For heavy fuel oil or when accurate results are wanted more quickly in a tank that is not approximately the same temperature throughout, a special trap thermometer should be used.

The time required for a thermometer to reach equilibrium in fuel oil is considerable and varies greatly with conditions. It will seldom be under five minutes and may be 20 minutes. The thermometer should be withdrawn quickly and read immediately. A second person will witness the reading, and a recording will be made in the tank farm gauge book.

The number of temperature measurements to be taken is a compromise between ideal accuracy and practicality and is determined by the depth of the petroleum involved. Table 3-5 cites the requirements for the number of measurements required based on the size of the tank.

Table 4-2, Thermometer Depths in Large Tanks		
Depth	No. of measurements	Where taken
Less than 10'	1	Center of oil
10' and less than 15'	2	3' from bottom 3' below surface
15' and less than 20'	3	3' from bottom Middle of oil 3' below surface
20' and over	3	5' from bottom Middle of oil 5' below surface

When taking multiple temperature readings, proceed as follows:

1. Lower the thermometers into the oil at the appropriate levels in accordance with Table 3-5. Allow all thermometers enough time to have the temperatures equalize.
2. Withdraw as rapidly as possible and read each thermometer to nearest degree.
3. After the readings are taken, compute an average and record the average temperature in the gauge book.
4. Basing issue volume on tank temperature is by no means necessarily correct if the pipelines are long and at different temperatures from the tank, and the issues relatively small in proportion to the line volume.
5. To avoid ignition hazards:
6. Ground your body and the thermometer chains by touching the stair rail or the tank shell with your bare hand and with the chains when approaching the top of tank and before opening the gauge hatch.
7. The chains attached to all thermometers will be of non-sparking material and will be constantly grounded with the side of the gauge hatch when taking temperature readings of aviation fuels.

7 Preventive Maintenance and Corrective Action

A maintenance program includes recurrent scheduled work and testing designed to preserve and maintain equipment and facilities in such condition that they may be effectively used for their intended purpose. It is performed on a regular cyclical schedule. Preventive maintenance encompasses all operator maintenance, shop work, and component replacements. Corrective actions are those taken to repair equipment or facilities that are broken or have been found to be close to failure.

The objectives of a well-integrated maintenance program are to:

- Ensure the continued efficient operation of equipment and facilities to avoid interruption in terminal operations
- Prevent the loss of petroleum products because of contamination, fires, spills or leaks
- Prevent the loss of life, injury to personnel or damage to property because of fires, explosion or accident
- Protect the environment against harmful effects resulting from the discharge of petroleum products
- Preserve the investment in equipment and facilities used in the storage and distribution of petroleum products
- Maintain pressure testing certification

7.1 *Automated Planned Maintenance Program*

The FLC PH Fuel Department uses a software program called MAXIMO to track its corrective and preventive maintenance programs. It is used to generate, track and analyze the following maintenance functions:

- Preventive maintenance
- Corrective maintenance
- Contractor Support
- Cleaning
- Inspections
- Tank water draining
- Man power analysis

7.2 *Components of the Planned Maintenance System (PMS)*

Several components are required to maintain a Planned Maintenance System. They are discussed below.

7.3 *Equipment and Facilities Inventory Lists*

A complete, valid and up-to-date inventory listing of all equipment and facilities is required in order to perform periodic maintenance for the entire Fuel Department.

7.3.1 Maintenance Procedures

MAXIMO Job Plan Operating Procedures provide detailed procedures for performing the maintenance or inspection for a particular piece of equipment. They are utilized to ensure that all required actions are done completely and consistently.

7.3.2 Maintenance Workload Assignments

The MAXIMO automated program is used to provide daily and weekly work tasks based on priority, task function, and equipment location similar to equipment guide lists for determining the workload for the maintenance personnel.

7.3.3 Preventive Maintenance Schedule

The preventive maintenance schedule is determined by NAVPET (PMS cycles), metrology, and manufacturers recommendations, as well as direction from the facility manager. There may also be additional divisional maintenance requirements for fire-fighting equipment and Personal Protective Equipment as required by applicable regulations.

The schedule includes daily, weekly, monthly, quarterly, semi-annually, and annual inspections and maintenance checks.

7.3.4 Daily Requirements to be performed by Operations Personnel

Perform the following activities daily when in use:

- Inspect fences. Report to supervisor if damaged
- Ensure security lighting is operational
- Inspect berm areas to ensure the drains are free, closed
- Properly store or dispose of oily rags
- Inspect cable connection points, wires, clips and insulation on grounding points. Report to supervisor if damaged. Ensure cables are coiled and placed on racks when not in use
- Check all controls for proper operation
- Clean hoses of oil and grease. Ensure they are capped and properly stored when not in use
- Check all exposed piping for leaks
- Check all pits for leaks, vapors, and cleanliness. Clean if necessary. Report to supervisor if damaged
- Inspect oil water separators
- During pump operation, check for unusual vibration and leaks. Ensure safety shields are in place. Check motors and bearings for local heating. Initiate MAXIMO Work Request to correct equipment discrepancies as noted but not limited to above
- Check valves and manifolds for leaks. Adjust packing as necessary. Make any minor corrections to components as practicable
- Inspect hoses and connections at truck fill stands/unloading areas for leaks or damage and appropriate markings
- General Housekeeping
- Daily Vehicle and MHE Inspections

7.3.5 Weekly Requirements to be performed by Operations Personnel

In addition to daily requirements, perform the following activities weekly when in use:

- Inspect roadways for erosion and potholes
- Inspect water drainage systems
- Remove and dispose of trash
- Inspect supply and exhaust fans, emergency showers and eyewashes for proper operation
- Check all communications systems
- Ensure all piping, valves, and equipment is oil and grease free. Clean as needed
- Inspect lighting and initiate MAXIMO Work Request to replace burned out bulbs by division 701
- Check hoses for wear and abrasion
- Check product recovery systems for proper operation
- Inspect pump motors for dirt and grease
- At buildings, check air compressor, oil, and belts. Drain air receiver
- Inspect emergency showers and eyewashes

7.3.6 Monthly Requirements

In addition to daily and weekly requirements, perform the following activities monthly: Maintenance (705) is responsible for the following:

- Check the location and condition of signage
- Operate disconnect switches to ensure proper opening and closing
- Check electrical grounds on aboveground tanks. Tighten or clean if necessary
- Check and read cathodic protection rectifier and sacrificial anode points

Operations Division (703) is responsible for the following:

- Visually check tanks for leaks and signs of corrosion. Spot paint if needed
- Inspect dikes for erosion
- Check tank gauges for moisture. Remove if found
- Check and clean oil water separators
- Check valves for ease of operation. Lubricate or adjust packing as needed

Facility Manager is responsible for the following:

- Check all exposed piping for corrosion. Direct painting as necessary.
- Inspect identification systems for condition and compliance with MIL STD 161.
- Inspect pipe, roofs, stairs, railings, and platforms for damage or corrosion. Paint or repair if needed.
- Check buildings for damage. Check plumbing for leaks. Check wall receptacles and control circuits.

7.3.7 Semi-annual Requirements

In addition to daily, weekly, and monthly requirements, operations will perform the following activity:

- Clean out strainers. Check gaskets. Replace if damaged.
- Calibrate meters.
- Annual Requirements
- In addition to daily, weekly and monthly requirements, operations and maintenance will perform the following activities annually:
- Calibrate all pressure and vacuum gauges.
- Inspect starter contactors for heating and surface condition.
- Inspect exposed wire, Circuit Breakers, and switches for safe condition.
- Inspect and test each pipeline pressure limiting device, relief valve, pressure regulator, and other pressure control equipment.
- Inspect and test each pipeline overfill protection system.
- Pressure test all fuel pipes in accordance with MO-230
- A qualified contractor will check the effectiveness of the pipeline cathodic protection system.

7.4 *Equipment Requirements*

There are many different types of equipment utilized at the FLC PH Fuel Department. They include valves, pumps, electric motors, tanks, hoses, meters and gauges, pipelines, truck loading facilities, and cathodic protection systems and even a railroad that operates inside Red Hill. In addition, there are many structures that require inspection and maintenance. However, there are two groups of items on which the Fuel Department does not perform maintenance or testing.

The slings and weights used by forklifts are owned and tested by FLC Transportation (Code 500) and cranes are maintained and tested by the base NAVFACHI Weight Handling Shop. The fuel meters are calibrated by a contractor. FLC Fuel maintains the capability to calibrate meters in case there are problems with the contractor.

7.4.1 Valves

There are thousands of valves of all sizes and types located throughout the facility. Maintenance requirements will vary depending on the manufacturer, type and size of the valves.

All valves are numbered with the following convention in order to identify them for operational line-ups and maintenance requirements:

- Valves that are associated with a particular tank start with the tank number and are followed with consecutive letters. Such as 1303A, 1303B etc. associated with FORFAC clarifier tank
- Valves that are not associated with a particular tank are numbered so that they are numerically similar to the location they are at. Such as valves 1304 through 1371 at the FORFAC

7.4.2 Pumps

When new pumps are being installed, have been taken out of service for maintenance and/or have been idle for a significant length of time, the following procedures must be followed to ensure against damage to the pump and motor, surrounding equipment and to operating personnel.

7.4.2.1 Starting Pumps

Before starting the pump, the following checks will be made as part of a safeguard procedure:

- Check all electrical connections to the motor to be sure they are tight
- Check for correct rotation of motor shaft. Correct rotation of the motor shaft when viewed from the top is counterclockwise (in a left hand direction). Incorrect rotation can cause extensive damage to the pump. When checking the rotation, the motor should only be activated momentarily to have a minimal number of revolutions. If allowed to rotate more than this, it may cause pump bearing failure if no liquid supply is present in the tank or sump
- Check to see that the motor oil reservoir has been filled
- Check discharge fittings and piping to ensure all connections have been made and are tight
- Check sub-base seal flange bolts and anchor bolts for tightness
- Check the mechanical seals for signs of damage or evidence of leakage
- Check to ensure fuel or liquid is available in the tank for a test run. Operation without liquid, to assure lubrication of the bearings, may result in bearing failure. It is permissible when making a motor rotation, check to operate the bearing dry but do not exceed 10 seconds of operation

Have the operator start the pump to check for vibration, leaking at the packing or seal chamber, at the suction/discharge connection and other connections, at the valves and fittings, and check for excessive heating of the motor and bearings.

If motor makes a humming noise when the starting switch is closed, but does not start, inspect for a loose connection in the wiring on the control panel.

7.4.2.2 Packing or Mechanical Seals

Leakage may occur slightly during the initial starting and the first few minutes of operation of the pump equipped with a packing gland. A small amount of leakage is required on pumps equipped with a packing gland. Attempts to stop all leakage will damage and score the shaft and render the packing ineffective.

If leakage persists, under no circumstances are attempts to stop the leak by tightening down on the packing gland to be pursued. If no mechanical seal is present, a small amount of packing may be gradually worked in to control the leakage. The packing will seat itself around the shaft and cannot be forced into effective control by tightening down the packing gland in one operation.

No leakage is acceptable with a mechanical seal. Initiate a MAXIMO Work Request to Investigate/Replace defective seal.

On units equipped with mechanical seals and visible circulation and drainable lines, ensure these lines are connected in place and that the openings are not plugged. Otherwise, the mechanical seal cannot function effectively.

Check the seal sleeve adjustment to ensure the seal is functioning properly. Refer to the installation section of the original manual for correct adjustment.

7.4.2.3 Vibration

Each pump and motor has been checked at the factory for smoothness of operation. After installation, if the pump vibrates while in operation, it should be shut off immediately. Several things, all of which should be carefully checked, may cause vibration.

Check registered fits of spacer coupling or solid shaft motors to ensure all fits are mated and that drive coupling and keys are in place.

Check for sprung or bent shaft by removing motor shaft nut or spacer coupling bolts and notice whether shaft ends line up with one another when not joined together, or whether top of shaft leans against side of driving coupling bore at the top of the hollow shaft motor.

Check to ensure the pump is hanging freely in tank or sump and not in contact with some object that has caused it to be misaligned.

Check seal flange to ensure some object is not under the pump base flange that could cause misalignment when the discharge flange is bolted tightly in place to the discharge pipe.

Check to see that the tank flange is leveled so that when the pump is bolted in place, the discharge flange lines up perfectly with the discharging piping or valves.

Any misalignment in discharge piping that results in a strain being placed on the pump base when connecting the flanges may cause misalignment and strain on the pump shaft and result in vibration.

7.4.2.4 Inspection and Lubrication

No external lubrication of the pump is necessary.

There are many factors affecting the grease life in electric motors: the rating of the motor, type of motor enclosure, duty, atmospheric conditions, humidity and ambient temperature are but a few of these factors. To avoid confusion regarding different lubricating intervals, it is recommended that motors be lubricated once a year using manufacturers 'recommendations. This will cover the factors mentioned above and will simplify motor re-lubrication procedures.

Oil lubricated motors are shipped without oil. Before starting the motor, check to ensure the oil level is correctly indicated. This will be done before starting any pumping operation. Oil will be changed once a year or every 2,000 hours of operation, whichever occurs first.

Ensure all drain plugs and filler plugs, gauge glasses, etc., are tight and that no oil is leaking from the motor.

Refer to the lubrication instruction plate on the side of the motor for possible further recommendations of proper viscosity oil required for operating temperature.

A complete list of recommended lubricating oils and greases are available in the operating and instruction manual published by the manufacturer.

8 All Hazards Emergency Response

8.1 *Oil and hazardous substance (OHS) spill*

Response to Oil and Hazardous Substance (OHS) spills and releases are extremely dangerous when chemical or physical properties are unknown, reactive, and/or pose acute or chronic health risks to personnel. OHS spills can result in injuries, fires, explosions or environmental pollution. Because of these hazards, Federal and state laws as well as Navy instructions require immediate response to and clean up of such spills. All NAVSUP FLCPH personnel shall be familiar with the command OHS contingency plan that is found in NAVSUPFLCPHINST 5090.1 series. Portions of that instruction are included in this section. All spills, regardless of size, must be reported to the Operations Supervisor.

8.1.1 Small Spills vs. Large Spills

The initial assessment of the incident requires the person who witnessed or discovered the spill to use operational risk management to determine if (1) the spill can be safely stopped and cleaned up by people in the immediate work area or (2) the personnel at the scene must evacuate and an emergency response is required. Regardless of the scope or severity of the situation, strict adherence to safety and health procedures must be followed to protect personnel in the vicinity of the spill site.

For small spills where the personnel in the work area have been trained and equipped with proper PPE and tools to safely stop and respond to the spill, follow the procedures in Section 10.5. The procedures in this section are for large spills that require an emergency response from Region or JBPHH.

8.1.2 Initial Actions for Large Spills on Land

If it is decided that an emergency response is required, personnel at the spill site must spread the alarm, evacuate the scene to a safe location and call the Regional Dispatch Center (RDC) at 911 to begin the emergency response sequence. Note that calling 911 using a non-government telephone, including cell phones, may connect you to the City and County of Honolulu emergency dispatcher. Inform dispatcher that you're calling from the Pearl Harbor Naval Base and they will obtain the information from you. They will then immediately contact the RDC and forward that information.

The RDC will dispatch the Federal Fire Department (FFD), ambulance, or security to the incident. The FFD is the primary emergency responder for OHS spills on land. The senior fire official is the Incident Commander (IC). The FFD and other emergency responders will then arrive at the scene, stop the spill, rescue the injured, monitor site safety, and guard against the possibility of fire. Final cleanup can be conducted by Code 700 personnel (if properly trained and equipped), NAVFAC HI or contractor.

The individual will also immediately report the incident to the Control Room Operator via two-way radio, or, if radios are unavailable, contact the control room via phone at 473-7837 Personnel shall and their supervisor to report the incident.

The control room operator will become the primary point of contact between the Fuel Department and outside agencies. The control room operator will follow emergency contact SOPs. If necessary, the Control Room can stop the flow of oil or to redirect the oil from the spill site by opening or closing valves, starting or stopping pumps and other operations. The control room operator shall then call the Fuel Director at 473-7833 or 690-0115 (cell). If unable to contact the Director, call the Deputy Fuel Director at 473-7801 or 479-6188 (cell). The control room operator shall also call the CDO at 473-1310, or 216-1339 (cell).

8.1.3 Initial Actions for Oil Spills into the Harbor

If any amount of oil is discharged into the harbor or into storm drains, ditches, etc. that will reach the harbor waters and cause a sheen, then immediately call the JBPHH Port Operations Control Tower at 474-6262. Also contact the control room as in section 8.1.1.c. above. The control room operator shall make other notifications and perform other emergency tasks per Section 8.1.1.d. above.

The JBPHH Facility Response Team (FRT) will be dispatched to begin on-water spill containment and cleanup. The FRT is the primary emergency responder for on-water spill response and recovery, not the FFD. The FRT will be the Incident Commander (IC) for the incident. When requested by the IC, the Fuel Department shall assist in the response by recovering oil using the vacuum trucks and weir skimmers. The request should be made to the Fuel Director or Deputy Fuel Director.

If the magnitude, severity or hazards of the incident exceed FRT first responder assets or capability to safely respond to, mitigate or clean up the spill, COMNAVREGHIINST 5090.1 series and the Region Integrated Contingency Plan (ICP) enables the Region Navy On-Scene Coordinator (NOSC) to assume management of the response. The NOSC will be able to obtain additional resources as well as interface with State and Federal On-Scene Coordinators. NAVSUP FLCPH personnel may be requested by the NOSC to become part of the Region spill management team (SMT) to manage this NAVSUP FLCPH OHS incident.

8.1.4 Federal, State and Other Agency Incident Notification.

For OHS incidents where the quantity released into the environment meets or exceeds the federal or state reportable quantity (RQ), regulations requires immediate notification to federal, State of Hawaii and the appropriate county authorities within 15 minutes after witnessing or discovering the spill. See NAVSUPFLCPHINST 5090.1 series to determine the appropriate agency to notify. Note that an oil spill on land is not reportable to federal agencies but a spill of 25 gallons or more on land is reportable to the state and county. Also, any oil that spills into a containment structure, such as the berms around each of the Upper Tank Farm tanks, is not considered a spill into the environment and should not be reported to the state and county. Any oil that causes a visible sheen on navigable waters is reportable to federal, state and county agencies.

Navy regulations require a Navy OHS spill message to be sent. Instructions for completing these messages are provided separately to NAVSUP FLCPH CDOs who will send this message. For major incidents, other Navy messages, such as NAVSUP Commander's Critical Information Report (CCIR), Situation Report (SITREP) or Operation Report (OPREP)-3 messages, may be sent. However, these messages do not replace the requirement to send the mandatory OHS spill message.

If the oil spill involves Defense Logistics Agency Energy (DLA Energy) capitalized bulk fuel or petroleum product and the volume of the spill exceeds 25 gallons on land or in any amount that creates a sheen on water, the Fuel Director, Deputy Fuel Director or CDO will submit the additional notifications per DLA Energy instructions.

Table 8-1, Oil Slick Estimates

Appearance of the Slick	Quantity of Product (gal/sq. mile)
Barely visible	25
Silvery sheen	50
Faint trace of color	100
Bright bands of color	200
Color begins to dull	666
Colors are much darker	1332

8.2 *Emergency Escape Procedures, Escape Routes and Evacuation*

Due to the large quantities of fuel stored at the fueling facilities, there are two conditions when evacuation of the terminal facilities may be necessary for employee safety. These conditions involve a catastrophic release of a very large amount of fuel and/or a condition resulting in a fire or explosions that threatens larger adjacent storage tanks, trucks, or vessels.

As described above, large spills require evacuation of the immediate spill area. Supervisors will provide site specific emergency escape procedures. Fire escape routes are posted throughout each facility and can be used for OHS emergencies. If an evacuation of a larger area beyond the initial spill site is necessary, the fire chief will notify personnel.

8.3 *Emergency Procedures for Fires*

Fire can be the most serious disaster that can occur at fuel facilities. This section describes personnel action in case of a fire.

Warn others in the immediate vicinity. If so equipped, notify control room via two-way radio. Activate the local building fire alarm system. See the list below for the fire alarm signal pattern that is applicable to the buildings listed.

Table 8-2, Fire Alarm Signals

Building	Fire Alarm Signal
1757	A long, continuous horn
1685 (Lab)	Horn with continuous pulse
Red Hill	Horn with three pulse temporal pattern

- Use the fire alarm box or telephone the fire alarm operator at 911.
- Notify Building 1757 control room operator via two-way radio, or telephone (473-7878), who will then notify the fuel director and the supervisors.
- Shut off electrical power to the equipment if electrical fire is involved if it can be done safely.*
- Shut off power to facility and close valves if the incident occurs at a pipeline manifold or pumping facility if it can be done safely.*

*Note: If unable to approach equipment Start/Stop switches due to fire, shut down power from breaker.

- Notify pump operator to shut off pumping equipment and close nearest block or flow control valve if the incident occurs during a transfer operation. All transfer operations must be stopped.

Caution: Do not close valves until all pumps are shut down, as this could cause a line rupture and further aggravate the emergency.

- Evacuate to a safe distance and account for personnel.
- Remove or secure other sources of ignition if possible and safe.
- Remove incompatible and flammable materials if possible and safe.
- Use fire extinguishers if properly trained and if safe and appropriate.
- For fires extinguished prior to reporting, notify 911 and FLC Command Duty Officer
- (CDO) at 473-1310, or 216-1339 (cell).

- The senior officer or civilian at the scene will direct Fuel Department personnel in fighting fires until the arrival of the fire company. In virtually all cases, the Fire Chief will become Incident Commander, once on scene.

Figure 8.1: FLC PH Fuel Department Incident Management Team Organization Chart

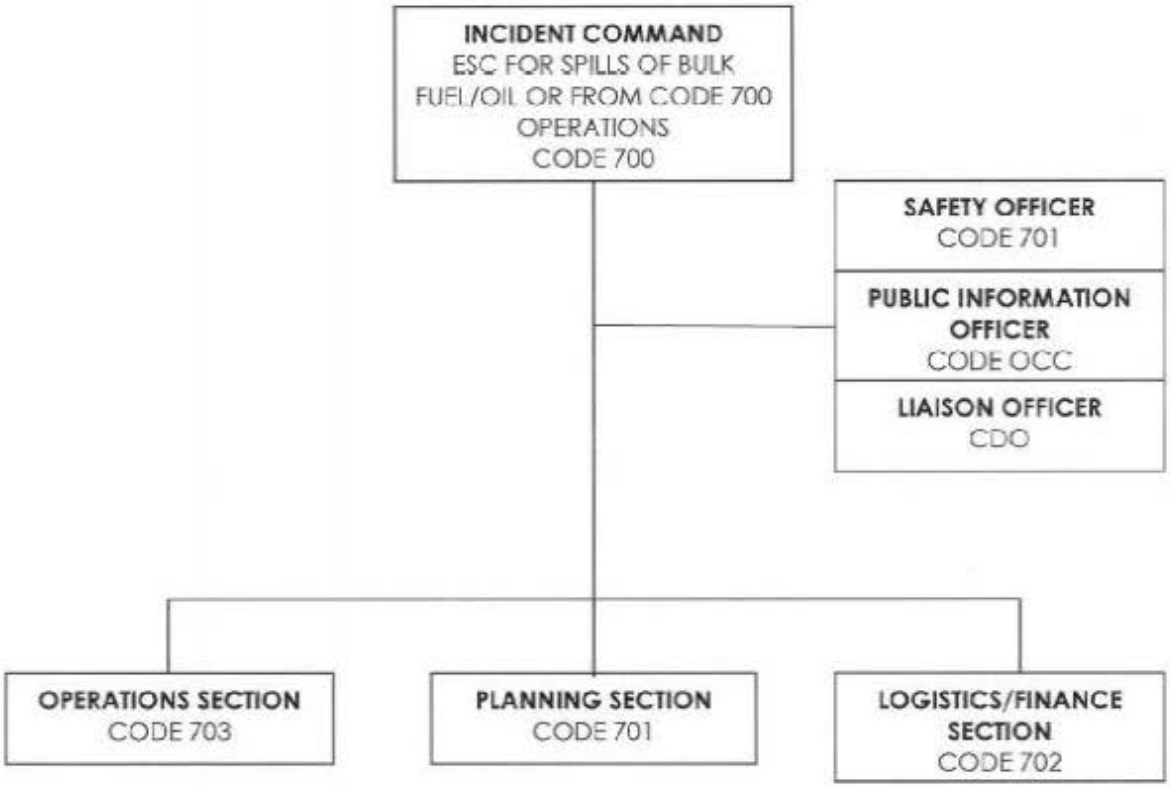


Table 8-3, Oil Spill Immediate Response Team

Name	Day Phone	24-Hour Phone	Response Time	Response Job
Code 700	473-7833	471-8081	< 1 hr	Emergency Spill Coordinator
Code 700A	473-7801	471-8081	< 1 hr	Alternate Emergency Spill Coordinator
Code 701	473-7818	471-8081	< 1 hr	Safety Officer
Code 703	473-7805	471-8081	< 1 hr	Operations Section Chief
Code 703	473-7813	471-8081	< 1 hr	Deputy Operations Section Chief

Port Ops is the coordinator for the Facility Response Team (FRT) and can be reached by telephone at 474-6262.

Table 8-4, Oil Spill Management Team				
Name	Day Phone	24-Hour Phone	Response Time	SMT Position
Code 700	473-7833	471-8081	< 1 hr	Emergency Spill Coordinator
Code 700A	473-7801	471-8081	< 1 hr	Alternate Emergency Spill Coordinator
Code 701	473-7818	471-8081	< 1 hr	Safety Officer
Code OCC	473-7993	471-8081	< 1 hr	Public Information Officer
CDO	216-1339	216-1339	< 1 hr	Liaison Officer
Code 703	473-7805	471-8081	< 1 hr	Operations Section Chief
Code 703	473-7813	471-8081	< 1 hr	Deputy Operations Section Chief
Code 701	473-7829	471-8081	< 1 hr	Planning Section Chief
Code 702	473-7812	471-8081	< 1 hr	Logistics and Finance Section Chief

Note: If the spill size, complexity or impact is beyond the capability of the Fuel Department to manage, the ESC or the CO can contact the Region Navy On-Scene Coordinator (473-4689 or 864-2463) to activate the Region SMT. The Region SMT will then establish other ICS functions, such as Wildlife Recovery and Rehabilition Branch, Documentation Unit, Resource Unit, etc.

Table 8-5, Emergency Notification Checklist for Oil Spills		
Agency Or Department	**Phone No.**	**Notified**
Qualified Individual / NOSC	473-4689	Person Notified: _____ Date / Time Notified: _____
National Response Center (NRC)	800-424-8802 (24-hour) 202-267-2675 (Direct #)	Person Notified _____ Date / Time Notified: _____ Report No (as applicable): _____
Hawaii State Emergency Response Commission (HSERC)	586-4249 (Work days)	Person Notified: _____

Provide follow-up written notification within 30 days of initial notification	247-2191 (After Hours) 586-7537 (Fax)	Date Notified: _____ Time Notified: _____ Report No. (as applicable): _____
Honolulu Local Emergency Planning Committee (LEPC) Submit follow-up written notification within 30 days of initial notification.	723-8960 (24-hour) 911 (Emergencies) 524-3439 (Fax)	Person Notified: _____ Date / Time Notified: _____ Report No. (as applicable): _____
Send navy message within 24-hours of discovery		
Send DLA Energy message per DLA policy for reporting spills of capitalized POL		

Table 8-6, Other Emergency Response Personnel Resources				
Source	Day Phone	24-Hour Phone	Response Time (Min)	Responsibility Capability
SUPSALV	(202) 781-3889	(202) 781-3889		

The FLC PH Harbor Command Duty Officer (CDO) will play a significant role by making notifications in any spill when requested by the Emergency Spill Coordinator. The Emergency Notification Checklist for oil spills is included for information purposes as Table 8-5.

Table 8-7, CDO Emergency Notification Checklist

Table 8-7, CDO Emergency Notification Checklist	
Time Of Notification And Name Of Contact	Immediately Upon Notification Of A Spill
	1. Notify the FLC Commander, (Code 430) for HS/HM/HW OR the Fuel Department Director (Code 700) for bulk petroleum. Code 400 – Tel: 473-4076 Pager 577-2757 Code 700 – Tel: 473-7801 Cell 479-6188
	2. Notify the Immediate Response Team (IRT) IRT Team POC is listed in FISCPINST 5090.1F, encl. (3). The Federal Fire Dept. will serve as the IRT for hazardous substances.
	3. Notify Port Services if storm drains or water bodies are threatened. Tel: 473-1168 or 473-1183
	4. Notify the Spill Management Team (SMT) SMT Team POC is listed in FISCPINST 5090.1H
NRC Case Number:_____	5. When directed by IC, notify the NRC Note: *Obtain NRC Case Number From NRC Representative. **Additional calls to the NRC may be necessary to report all required information. Tel: 1-800-424-8802 or 1-202-267-2675
	6. Notify COMNAVREG Hawaii, Navy On Scene Coordinator (NOSC). (Leave your name and telephone number so the NOSC may reach you for additional information) Additionally, specify if your report is to inform or request assistance. Tel: 473-4689 (Office) Tel: 864-2463 (24 Hrs.) Tel: 473-4689 (Office) Tel: 864-2463 (24 hr)
Time Of Notification And Name Of Contact	Upon direction from FIC/NOSC/ and the spill exceeds the reportable quantity (RQs) according to state and federal regulations.
	8. Notify the Executive Officer Tel: 473-0962 Cell: 216-1330

Table 8-7, CDO Emergency Notification Checklist	
Time Of Notification And Name Of Contact	Immediately Upon Notification Of A Spill
	9. Notify the Commanding Officer Tel: 473-0961 Cell: 216-1328
State Case Number: _____	10. Notify the Hawaii State Emergency Response Center (HSERC) Tel: 586-4249 or 247-2191 After Hours
	11. Notify the City and County of Honolulu Local Emergency Planning Committee (LEPC) Tel: 724-8960, Emergency: 911 (24 Hr)
	12. Notify COMNAVREG Hawaii Safety Tel: 474-3447 x 228 Cell: 221-8063
	13. Notify FLC SECURITY OFFICER Tel: 473-7575 Cell: 216-1336
	The CDO shall standby to draft/compile the information for an OHS spill message per OPNAVIST 5090.1C/COMNAVREGHIINST 5090.1 series and, if necessary, an OPREP 3 Navy Message.

8.4 *Emergency Procedures for Hazardous Weather*

Tropical cyclones are one of the most disruptive peacetime threats to navy operations, personnel, and families. Within the Hawaiian Islands, the tropical cyclone season has been formally established as 01 June through 30 November.

Refer to the COMNAVREG Hawaii Disaster Response Plan (DRP) for updated procedures regarding Hurricane/Storm procedures. In the event that the DRP conflicts with this Operations Manual, follow procedures outlined in the DRP.

The following Storm Conditions will be met for shore activities in the Pearl Harbor area when winds of 50 knots or more are expected:

- Condition IV - Within seventy-two (72) hours.
- Condition III - Within forty-eight (48) hours.
- Condition II - Within twenty-four (24) hours.
- Condition I - Within twelve (12) hours.

These Conditions of Readiness (COR) will be set and secured in the Hawaiian Region by order of the Regional Planning Agency (COMNAVREG Hawaii) via CEMG 14.1.

overexposed by inhalation, get the victim to fresh air, supply artificial respiration if necessary, and GET MEDICAL ATTENTION: CALL 911.
Wait for the Federal Fire Department to arrive and direct them to the spill.

10.5 *Emergency Response and Environmental Protection Procedures*

10.5.1 **Oil and hazardous substance (OHS) spill**

A significant cause of water pollution that creates the most adverse public reaction for the Navy is an oil and hazardous substance (OHS) spill. Over 50 percent of all spills are the result of human error. As required by OPA 90 and Navy guidelines, FLCPH uses the Incident Command System (ICS) to facilitate coordination with other DoD, contractor, public and regulatory personnel during a spill event. ICS provides the flexibility to tailor the response organization to meet changing requirements of the spill. Figure 8.1 titled — FLC PH Department Incident Management Team Organization Chart depicts the fully activated organization of the Team using personnel directly available in the FLC chain-of-command. This organization can be expanded per ICS with additional personnel as the situation requires.

10.5.1.1 Notification

The notification process is one of the most important parts of the emergency response. The manner in which this process is carried out will dictate the effectiveness of the response and cleanup efforts. Thus, key personnel involved with notification procedures are required to possess an intimate knowledge of the information found within this section.

Note: All OHS spills within the coastal waters, regardless of substance or size, must be reported to JBPHH Port Operations immediately.

The Emergency Spill Coordinator (ESC) is responsible for initiating the notification process. The FLC PH Command Duty Officer (CDO) supports when requested. These two individuals will ensure that all appropriate federal, state, and local officials are notified as well as all personnel needed to respond to the spill. Listed below are general notification procedures that are applicable to all facility personnel.

10.5.1.2 Responsibilities of the Discoverer

Response to Oil and Hazardous Substance (OHS) spills and releases are extremely dangerous when chemical or physical properties are unknown, reactive, and/or pose acute or chronic health risks to personnel. Personnel handling OHS shall have First Responder Awareness. All personnel, regardless of competency, shall not enter the exclusion zone until:

- The spilled material is positively identified.
- Hazard control zones are established.
- Decontamination corridor is established.
- Appropriate personal protective equipment is provided.

Methods of control, containment and cleanup are approved by the Incident Commander (IC) or Unified Command.

10.5.1.3 Reporting the Incident

Any release of petroleum products, chemicals, or any other substance that leaves a slick or sheen of any kind is a reportable incident. Whenever an oil sheen is discovered in Pearl Harbor, it must be reported to the control room and in turn reported to Port Operations. It doesn't matter how small or insignificant it may seem, federal regulations in the Clean Water Act require immediate notification. Operators shall not wait while to check if perhaps it was current fueling operations that caused the spill or the source of the sheen. The first course of action in any case is to notify the control room and/or Port Ops.

The Port Ops Facility Response Team will investigate and make formal notification to the National Response Center if necessary.

Upon discovery of an OHS spill, the individual will immediately report the incident to the Control Room Operator via two-way radio, or, if radios are unavailable, contact the control room via phone at 473-7878. The control room operator will become the primary point of contact between the Fuel Department and outside agencies and the Control Room Operator will follow emergency contact SOPs.

If unable to contact the control room for any reason, report the incident to the Regional Dispatch Center (RDC) at 911. The RDC will dispatch the Federal Fire Department (FFD), ambulance, or security to the incident. Note that calling 911 using a non-government telephone, including cell phones, may connect you to the City and County of Honolulu emergency dispatcher. Inform dispatcher that you're calling from the Pearl Harbor Naval Base and they will immediately transfer your call to the RDC. The Fire Department will help monitor site safety, provide emergency site security, and guard against the possibility of fire. The FFD will notify the CDO. The CDO will notify the Fuels Department Director.

The discoverer must provide as much of the following information as possible:

1. Specific location of the incident.
2. Source and cause of the discharge.
3. Total quantity of product discharged.
4. Amount of product discharged into water.
5. Type of product discharged.
6. Actions, if any, taken to cease or contain the discharge.

ALL OTHER PERSONNEL NOT DIRECTLY INVOLVED WITH SPILL RESPONSE OPERATIONS WILL REMAIN AT THEIR STATIONS AND CONTINUE TO WORK UNTIL INSTRUCTED OTHERWISE.

The information given above pertaining to the discharge should be provided in the report. The total amount of product discharged into the water is a critical piece of information that must be reported accurately. The quantity of product discharged will dictate the type of response deployed by the Fuel Department; thus, the following information relating oil slick appearance to the quantity of oil present will act as a guideline when reporting the quantity of product discharged

Table 10-1, Oil Slick Estimates

Appearance of the Slick	Quantity of Product (gal/sq.
Barely visible	25
Silvery sheen	50
Faint trace of color	100
Bright bands of color	200
Color begins to dull	666
Colors are much darker	1332

10.5.1.4 Oil and Hazardous Substance Spill Recovery and Containment

For specific instruction, refer to FLCPINST 5090.1H and COMNAVREG Hawaii Integrated Contingency Plan (ICP), April 2004. The ICP has precedence over procedures outlined in this document.
Response
In the event of an OHS spill, the following steps must be taken:

- Stop the operation immediately by shutting off pumps, pressure control valves, and sectional valves.
- For land spills: Block the spill from reaching storm drains by use of sorbent material and earthen barriers.
- For spills within the coastal waters:
- Contain the spill by use of Class II type Oil Booms, sorbent rolls, and sorbent blankets.
- If nested to a buoy or moored to a pier, notify adjacent float commands.
- Make notifications as listed in this section, or in the COMNAVREG ICP.
- Implement the COMNAVREG ICP (if needed).
- Begin cleanup operations after all sources creating the spill have been secured.
- Material used for cleanup operations are available at the following locations:
- One (1) boat at Building No. 1758
- Class II Type Oil Booms at Bldg. 1757
- Sorbent rolls, sorbent material, and sorbent blanket rolls at Building No. 1757.

All spills, regardless of size, must be reported to the Operations Supervisor. The Supervisor will immediately proceed to the site of the spill and make a determination of the severity of the spill and if additional resources are needed. Upon notification by the Operations Supervisor, the Day Dispatcher will activate the Oil Spill Notification procedures checklist and notify all concerned.

10.6 *Emergency Escape Procedures and Escape Routes*

Due to the large quantities of fuel stored at the fueling facilities, there are two conditions when evacuation of the terminal may be necessary for employee safety. These conditions involve a catastrophic release of a very large amount of fuel and/or a condition resulting in a fire or explosions that threatens larger adjacent storage tanks, trucks, or vessels. If an evacuation is necessary, the fire chief will notify personnel. The fire department is the primary response team for all fires, explosions, and spills.

10.7 *Emergency Procedures for Fires*

Fire can be the most serious disaster that can occur at fuel facilities. This section includes personnel action in case of a fire.

10.7.1 Procedures for Reporting of Fires:

Warn others in the immediate vicinity. If so equipped, notify control room via two-way radio. Activate the local building fire alarm system. See the list below for the fire alarm signal pattern that is applicable to the buildings listed.

Table 10-2, Fire Alarm Signals

Building	Fire Alarm Signal
1757	A long, continuous horn
Red Hill	Horn with three pulse temporal pattern

- Use the fire alarm box or telephone the fire alarm operator at 911.
- Notify Building 1757 control room operator via two-way radio, or telephone (473-7878), who will then notify the fuel director and the supervisors.
- Shut off electrical power to the equipment if electrical fire is involved if it can be done safely.*
- Shut off power to facility and close valves if the incident occurs at a pipeline manifold or pumping facility if it can be done safely.*

Note: If unable to approach equipment Start/Stop switches due to fire, shut down power from breaker.

- Notify pump operator to shut off pumping equipment and close nearest block or flow control valve if the incident occurs during a transfer operation. All transfer operations must be stopped.

Caution: Do not close valves until all pumps are shut down, as this could cause a line rupture and further aggravate the emergency.

- Evacuate to a safe distance and account for personnel.
- Remove or secure other sources of ignition if possible and safe.
- Remove incompatible and flammable materials if possible and safe.
- Use fire extinguishers if properly trained and if safe and appropriate.
- For fires extinguished prior to reporting, notify 911 and FLC Command Duty Officer
- (CDO) at 473-1310, or 216-1339 (cell).
- The senior officer or civilian at the scene will direct Fuel Department personnel in fighting fires until the arrival of the fire company. In virtually all cases, the Fire Chief will become Incident Commander, once on scene.

Figure 10.1: FLC PH Incident Organization Chart

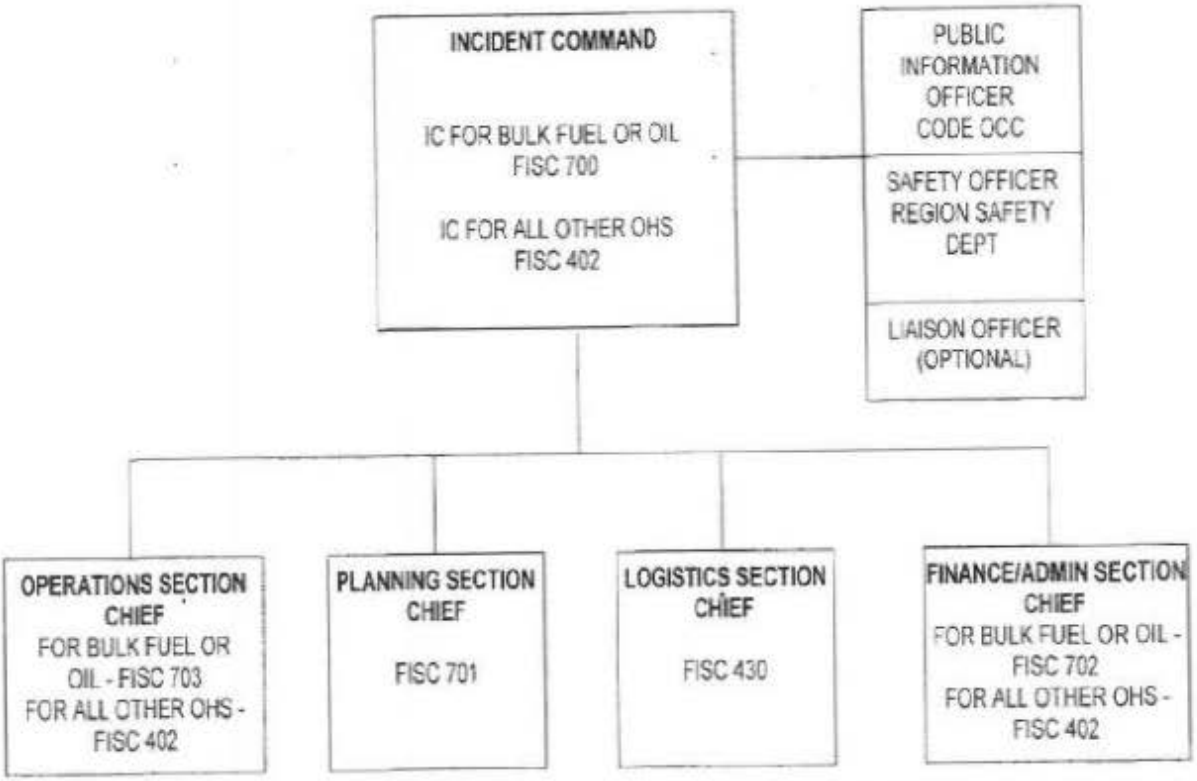


Table 10-3, Oil Spill Immediate Response Team

Name	Day Phone	24-Hour Phone	Response Time (Min)	Response Job
Code 700	473-7842	471-8081	< 1 hr	Incident Commander
Code 700A	473-7842	471-8081	< 1 hr	Deputy Incident Commander
Code 703	473-7842	471-8081	< 1 hr	Operations Section Chief
Code 703	473-7842	471-8081	< 1 hr	Activity Spill Response Team (ASRT) Coordinator
Code 703	473-7842	471-8081	< 1 hr	ASRT Coordinator

Port Ops is the coordinator for the Facility Response Team (FRT) and can be reached by telephone at 474-6262.

Table 10-4, Oil Spill Management Team

Name	Day Phone	24-Hour Phone	Response Time (Min)	Response Job
Code 700	473-7801	473-8081	< 1 hr	Incident Commander
Code 700A	473-7833	473-8081	< 1 hr	Deputy Incident Commander
NAVREGHI	474-3447 x228	722-7391	< 1 hr	Safety Officer
FLC Legal	473-7560	473-8081	< 1 hr	Legal/Claims Officer

Table 10-4, Oil Spill Management Team				
Name	Day Phone	24-Hour Phone	Response Time (Min)	Response Job
FLC PAO	473-7993	473-8081	< 1 hr	Public Affairs Officer
Code 703	473-7805	473-8081		Operations Section Chief
FFD	911	911		Rescue and Salvage Branch Director
FFD	911	911		Firefighting Unit Leader
FFD	911	911		Cargo/Pumps Unit Leader
JBPH-H FRT	474-6262			Spill Cleanup Branch Director
JBPH-H FRT	474-6262			Offshore Unit Leader
JBPH-H FRT	474-6262			Shoreline Protection Unit Leader
Code 703	473-7805	473-8081	< 1 hr	Shoreline Cleanup Unit Leader
Code 703	473-7805	473-8081	< 1 hr	Waste Management Unit Leader
PACDIV	471-4149	375-4692		Wildlife Rescue Unit Leader
Code 700A	473-7833	473-8081	<1 hr	Documentation Unit Leader
Code 702	473-7886	473-8081		Reports and Status Supervisor

Table 10-5, Available Adjacent Navy/DoD Emergency Response Personnel				
Name	Day Phone	24-Hour Phone	Response Time (Min)	Response Job
PACDIV	471-9338	NA	< 1 hr	Wildlife Branch
FFD	911	911	< 15 min	Fire Chief
Environmental Dept. Public Works Center	471-3926	471-8481 471-0998	< 1 hr	Environmental

Table 10-6, Other Emergency Response Personnel Resources				
Source	Day Phone	24-Hour Phone	Response Time (Min)	Responsibility Capability
SUPSALV	(202) 781-3889	(202) 781-3889		

The FLCPH Command Duty Officer (CDO) will play a significant role by making notifications in any spill. The CDO Emergency Notification Checklist is included for information purposes as Table 8-7.

Table 10-7, CDO Emergency Notification Checklist

Time Of Notification And Name Of Contact	Immediately Upon Notification Of A Spill
	1. Notify the FLC Commander, (Code 430) for HS/HM/HW OR the Fuel Department Director (Code 700) for bulk petroleum. Code 400 – Tel: 473-4076 Pager 577-2757 Code 700 – Tel: 473-7801 Cell 479-6188
	2. Notify the Immediate Response Team (IRT) IRT Team POC is listed in FLCPINST 5090.1F, encl. (3). The Federal Fire Dept. will serve as the IRT for hazardous substances.
	3. Notify Port Services if storm drains or water bodies are threatened. Tel: 473-1168 or 473-1183
	4. Notify the Spill Management Team (SMT) SMT Team POC is listed in FLCPINST 5090.1H
NRC Case Number: _____	5. When directed by IC, notify the NRC Note: *Obtain NRC Case Number From NRC Representative. **Additional calls to the NRC may be necessary to report all required information. Tel: 1-800-424-8802 or 1-202-267-2675
	6. Notify COMNAVREG Hawaii, Navy On Scene Coordinator (NOSC). (Leave your name and telephone number so the NOSC may reach you for additional information) Additionally, specify if your report is to inform or request assistance. Tel: 473-4689 (Office) Tel: 864-2463 (24 Hrs.) Tel: 473-4689 (Office) Tel: 864-2463 (24 hr)
Time Of Notification And Name Of Contact	Upon direction from FIC/NOSC/ and the spill exceeds the reportable quantity (RQs) according to state and federal regulations.
	8. Notify the Executive Officer Tel: 473-0962 Cell: 216-1330
	9. Notify the Commanding Officer Tel: 473-0961 Cell: 216-1328
State Case Number: _____	10. Notify the Hawaii State Emergency Response Center (HSERC) Tel: 586-4249 or 247-2191 After Hours

Table 8-7, CDO Emergency Notification Checklist	
Time Of Notification And Name Of Contact	Immediately Upon Notification Of A Spill
	11. Notify the City and County of Honolulu Local Emergency Planning Committee (LEPC) Tel: 724-8960, Emergency: 911 (24 Hr)
	12. Notify COMNAVREG Hawaii Safety Tel: 474-3447 x 228 Cell: 221-8063
	13. Notify FLC SECURITY OFFICER Tel: 473-7575 Cell: 216-1336
	The CDO shall standby to draft/compile the information for an OHS spill message per OPNAVIST 5090.1C/COMNAVREGHIINST 5090.1 series and, if necessary, an OPREP 3 Navy Message.

10.8 *Emergency Procedures for Hazardous Weather*

Tropical cyclones are one of the most disruptive peacetime threats to navy operations, personnel, and families. Within the Hawaiian Islands, the tropical cyclone season has been formally established as 01 June through 30 November.

Refer to the COMNAVREG Hawaii Disaster Response Plan (DRP) for updated procedures regarding Hurricane/Storm procedures. In the event that the DRP conflicts with this Operations Manual, follow procedures outlined in the DRP.

The following Storm Conditions will be met for shore activities in the Pearl Harbor area when winds of 50 knots or more are expected:

- Condition IV - Within seventy-two (72) hours.
- Condition III - Within forty-eight (48) hours.
- Condition II - Within twenty-four (24) hours.
- Condition I - Within twelve (12) hours.

These Conditions of Readiness (COR) will be set and secured in the Hawaiian Region by order of the Regional Planning Agency (COMNAVREG Hawaii) via CEMG 14.1.

10.8.1 **Preparation Actions:**

10.8.1.1 At All Times:

Each division shall maintain a storm locker stocked with the items listed in Table 6-8. Suggested quantities may be adjusted as determined by each respective Division Head.
Prior to Hurricane Season, (June 1):
Inventory each storm locker and prepare a reorder list for stocks to be replenished or refreshed. Fill from end of year funds, or if none, in October from New Year's funds.

10.8.1.2 Upon Setting Condition IV

- Call a meeting including all supervisors and other appropriate personnel to organize for a possible storm.

Appendix B

APPLICABLE FEDERAL AND DoD ENVIRONMENTAL DIRECTIVES

TITLE	LOCATION
Code of Federal Regulations	
29 CFR § 1910.38: Employee Emergency Plans and Fire Prevention Plans	http://www.access.gpo.gov/nara/cfr
33 CFR § 154: Facilities Transferring Oil or Hazardous Materials in Bulk	http://www.access.gpo.gov/nara/cfr
33 CFR § 156: Oil and Hazardous Material Transfer Operations	http://www.access.gpo.gov/nara/cfr
40 CFR § 110: Discharge of Oil/Oil Pollution Prevention	http://www.access.gpo.gov/nara/cfr
46 CFR § 162.028-5: Engineering Equipment	http://www.access.gpo.gov/nara/cfr
Department of Defense Publications	
DOD 4140.23: Management of Petroleum Products, Natural Gas, and Coal	http://www.defenselink.mil
DOD 4140.25: Management of Bulk Petroleum Products, Storage and Distribution	http://www.defenselink.mil
National Fire Prevention Association	
NFPA 30: Flammable and Combustible Liquid Code	http://www.nfpa.org
NFPA 45: Laboratories Using Chemicals	http://www.nfpa.org
NFPA 51B: Standard for Fire Prevention During Welding, Cutting, and other Hotwork	http://www.nfpa.org
NFPA 70: National Electrical Code	http://www.nfpa.org
NFPA 407: Aircraft Fuel Service	http://www.nfpa.org
Military Handbook	
MIL-HDBK-200G: Quality Surveillance Handbook for Fuels, Lubricants, and Related Products (replaced with MIL-STD-3004A)	http://www.dsp.dla.mil
MIL-HDBK-201B: Military Standardization Handbook - Petroleum Operations	http://www.dsp.dla.mil
MIL-HDBK-844 (AS): Aircraft Refueling Handbook Ashore	http://www.dsp.dla.mil
MIL-HDBK-1022: Petroleum Fuel Facilities (New Construction)	http://www.dsp.dla.mil
Military Standards	
MIL-STD-161: Methods for Bulk Product Systems Including Hydrocarbon Missile Fuels	http://www.dsp.dla.mil
MIL-STD-457B: Tanks, Petroleum Fuel and Lubricants, Operation and Bulk Storage - Minimum Frequency for Inspection and Cleaning	http://www.dsp.dla.mil
MIL-STD-3004A: Quality Surveillance for Fuels, Lubricants, and Related Products	http://www.dsp.dla.mil
American Society for Testing and Materials	
ASTM D-1086: API Standard 2543, Method of Measuring the Temperature of Petroleum and Petroleum Products	http://www.api.org/tech

TITLE	LOCATION
American Petroleum Institute	
API Standard 161: Method of Measuring Temperature of Petroleum and Petroleum Products	http://www.api.org/tech
API Standard 653: Tank Inspection, Repair, Alteration, and Reconstruction	http://www.api.org/tech
API Standards 1529: Aviation Fueling Hose	http://www.api.org/tech
API Standard 1581: Specifications and Quality Procedures for Aviation Jet Fuel Filter/Separators	http://www.api.org/tech
NAVAIR Publications	
NAVAIR 00-80T-109: Aircraft Refueling NATOPS	http://www.natec.navy.mil
NAVAIR 00-80T-96	http://www.natec.navy.mil
NAVFAC	
NAVFAC MO-230: Petroleum Fuel Facilities Maintenance Manual	http://www.navfac.navy.mil/docs
NAVFAC MO-307: Corrosion Protection Systems by Cathodic Protection	http://www.navfac.navy.mil/docs
NAVFAC MO-322: VI/II: Inspection of Shore Facilities	http://www.navfac.navy.mil/docs
NAVFAC P-300: Management of Civil Engineering Support Equipment	http://www.navfac.navy.mil/docs
Navy Supply	
NAVSUP P-558: Petroleum Management Ashore	http://www.navpetoff.navy.mil
NAVSUP PUB. 1, VOL II: Supply Ashore	http://www.navpetoff.navy.mil
SECNAV/OPNAV	
SECNAVINST 5212.5C: Navy and Marine Corps Records Disposition Manual	http://neds.nebt.daps.mil
OPNAV 4020.25A: Controlling and Accounting for Ground Products (Change #1)	http://neds.nebt.daps.mil or http://12.3.216.25
OPNAV 5090.1B: Environmental and Natural Resources Program Manual	http://neds.nebt.daps.mil
OPNAV 5100.23E: Navy Occupational Safety and Health (NAVOSH) Program Manual	http://neds.nebt.daps.mil
OPNAV 5530.14C: Navy Physical Security	http://neds.nebt.daps.mil
Miscellaneous	
Underwriter's Laboratory	http://www.ul.com
Defense Energy Support Center: Environmental Guide for Fuel Terminals	http://www.desc.dla.mil
Deskbook: Defense Acquisition Deskbook	http://deskbook.osd.mil
Deskbook Reference Library: Laws, Directives and Regulations	http://deskbook.osd.mil
DoDSSP: DoD Single Stock Point for Military Specs, Standards, & Related	http://dodssp.mil

INTRODUCTION

General

In general, the following applies:

- The Transfer Record will be prepared in duplicate every day during which a petroleum transfer occurs. The duplicate will be routed to the Operations Supervisor and Control Division.
- The Inventory Record will be prepared weekly. The form will be completed every Tuesday and the last working day of the month and submitted to the Operations Supervisor.

Forms, Records, and Logs

The following is a general breakdown of Forms, Records, and Logs required by the FISC Pearl Harbor Fuel Department. Refer to Section B through Y for more detailed information regarding the various forms, records, and logs. Shift Logs are to be emailed to the Operations Supervisor, the Maintenance Forman, the Control Division Supervisor, the Lab Supervisor, the Staff Civil Engineer, the Deputy Director and the Director at the end of each shift.

1. **Red Hill**

Gauger Station:

- A complete log of the conditions of tanks, sump pumps, ventilation fans, fire detection/alarm systems, communication systems, elevators, security cameras, sewer pumps, lighting systems, UPS systems, doors, fencing and power/ water supplies should be noted at least twice in one shift.
- Log ground water infiltration into the tunnels through the tunnel walls and floors especially where water is impacting pipelines, conduits, elevators and critical equipment.
- The person in charge should maintain a complete log of his/her whereabouts, instructions, and operations.
- Worker shall maintain a log of the upper access galleries where ventilation, tightness of manhole covers, etc. should be noted.
- A record of tank gauges shall be kept in a columnar form. Compare gauge with previous readings to determine if tank shows evidence of leakage. Report discrepancies to UGPH Operator in Charge.
- Lock Out/Tag Out responsibility must be passed from shift to shift and recorded in the log.
- A record of people entering and exiting Red Hill shall be kept. The record should indicate name, time entered, general whereabouts, and time exited.

Control Room Log shall include the following:

- Orders received

- Orders given
- Opening of valves
- Starting of motors and pumps
- Stopping of motors
- Consumption of supplies throughout the system
- Trouble of any sort occurring during each shift and to whom reported for correction
- Oil samples taken and their disposition
- Record of visitors and tour parties. Access to Red Hill Underground Storage is restricted to personnel whose official duties require their presence in the area. Other visitors will be allowed in the area only if authorized or escorted by the Fuel Department Director, Assistant to the Director, Deputy Director, or Operations Supervisor.
- Any other remarks to give the complete picture during each shift
- Status of H-Pier sump pumps and pier drainage directional valve

2. **Kuahua**

Loading Rack Office:

- Loading Rack Work Sheet (FISC 703-03), Section Q, shall be used to record actual quantities loaded and delivered. The form shall be forwarded every morning, together with completed issue documents, to Building 1757 for review by the Operations Supervisor. After review, the work sheet will be forwarded to the Control Division.
- Truck Inventory showing, for each tank truck, the type product and the quantity remaining in the truck at the end of the shift.
- Sump pumps, AFHE UPS system, Loading Arm, and Scully system status
- Conductivity Log
- Accidents and mishaps

Fuel and Oil Recovery Facility will maintain a log showing:

- Tasks performed during the shift
- Amount of water drained into the NAVFAC Sanitary Sewer System, the NAVFAC Bilge and Oily Water Treatment System and the Storm Drain Outfall
- Amount of water treated and drained into sanitary sewer
- Status of Berm Drain valves for the FORFAC and UTF
- Tanker Truck Inspection Forms
- Acceptance forms for offloading

- Accidents and mishaps

Kuahua Roving Patrol will maintain a log showing:

- Security checks for Waste Oil Recovery Facility when it is not manned to include lighting and oil sump level.
- Status of all berms at all tanks
- Lighting in all operational areas
- Fencing
- Time facilities are checked and secure
- Status of all valve chambers and other tasks performed during shift
- Status of all piers where fueling/defueling occur
- Accidents and mishaps

Dispatcher will maintain a log showing:

- Personnel Coverage – Name of person/s requiring coverage and person/s covering
- Operational Coverage and evolution time statement and Person in Charge
- Any regulatory requirements such as spills, berm drainage, accidents/mishaps, witnesses

NAVSUP

Naval Supply Systems Command

Fleet & Industrial Supply Center (Code 703)

TANKER ULLAGE REPORT

DATE: 17 MAY 2010

TANKER: YON 281

CARGO: F-76

**** CERTIFICATION OF GAUGES ****

SIGNATURE OF SHIP'S REPRESENTATIVE

SIGNATURE OF FUEL DEPT. REPRESENTATIVE (BEFORE)

SIGNATURE OF FUEL DEPT. REPRESENTATIVE (AFTER)

DRAFT	FWD.	AFT.	MEAN
BEFORE	N/A	N/A	N/A
AFTER	N/A	N/A	N/A

TOTAL GROSS BBLS/GLS AFTER RECEIPT/DISCHARGE: 177025

API GRAV. @ 60 °F.	AVG. TEMP	FACTOR
34.9	79.3	.9910

TOTAL NET BBLS/GLS AFTER RECEIPT/DISCHARGE: 175432

BEFORE RECEIPT/DISCHARGE

PORT

TANK NO.	ULLAGE	WATER	TEMP.	GROSS BBLS/GLS
2	5'3" 1/4	Ø	82°	20823
4	5'4" 0	Ø	82°	21082
6	5'4" 7/8	Ø	82°	21385
8	5'6" 0	Ø	82°	21774

STBD

TANK NO.	ULLAGE	WATER	TEMP.	GROSS BBLS/GLS
1	5'3" 0	Ø	82°	20736
3	5'3" 1/2	Ø	82°	20909
5	5'4" 7/8	Ø	82°	21385
7	5'5" 1/2	Ø	82°	21601

BEFORE GROSS BBLS/GLS: 169695

API GRAV. @ 60 °F.	AVG. TEMP	FACTOR
34.9	82°	.9898

BEFORE NET BBLS/GLS: 167964

AFTER RECEIPT/DISCHARGE

PORT

TANK NO.	ULLAGE	WATER	TEMP.	GROSS BBLS/GLS
2	10'7" 1/8	Ø	80°	42913
4	10'8" 0	Ø	80°	43215
6	10'8" 1/4	Ø	80°	43301
8	10'9" 0	Ø	80°	43561

STBD

TANK NO.	ULLAGE	WATER	TEMP.	GROSS BBLS/GLS
1	10'7" 1/4	Ø	80°	42956
3	10'7" 1/2	Ø	80°	43043
5	10'8" 0	Ø	80°	43215
7	10'8" 3/4	Ø	80°	43474

AFTER GROSS BBLS/GLS: 345670

API GRAV. @ 60 °F.	AVG. TEMP	FACTOR
34.9	80°	.9907

AFTER NET BBLS/GLS: 342463

FISC Fuel Form 703-16

TANK INVENTORY CONTROL DAILY LEVELS

DATE 12 JUL 10 REPORT QUANTITIES IN NET BBLS FROM AFHE EVERY 4 HOURS

SHIFT	DAY	DAY	SWING	SWING	3/13 MID	MID
TIME	0655	1225	1525	2017	0000	0400
TANK 0102 T	253,382	253,382	253,382	253,381	253380	253381
TANK 0103 I	245,047	243,338	243,144	243,144	243144	243144
TANK 0104 T	253,262	253,258	253,255	253,250	253248	253248
TANK 0105	OUT OF SERVICE - TANK REPAIRS					
TANK 0106	259,870	259,870	259,869	259,869	259869	259869
TANK 0107	269,473	269,473	269,473	269,473	269473	269473
TANK 0108	268,690	268,690	268,690	268,690	268691	268690
TANK 0109	268,938	268,938	268,938	268,938	268938	268938
TANK 0110 I	244,837	243,146	243,146	243,146	243144	243144
TANK 0111	269,493	269,493	269,494	269,493	269494	269494
TANK 0112	268,714	268,714	268,714	268,714	268714	268714
TANK 0113	169,394	169,394	169,394	169,394	169394	169394
TANK 0114 I	237,829	233,052	195,697	195,591	195590	195590
TANK 0115	205,168	205,168	205,168	205,168	205168	205168
TANK 0116	264,809	264,809	264,809	264,809	264809	264809
TANK 0117	OUT OF SERVICE - TANK REPAIRS					
TANK 0118	269,892	269,892	269,892	269,892	269892	269892
TANK 0120	262,907	262,908	262,908	262,907	262907	262907
TANK 1	1165.9	1165.9	1,165.9	1,165.9	1165.9	1165.9
TANK 2	6581.1	6581.1	6,584.7	6,584.5	6584.5	6584.5
TANK 3	6,373.6	6373.6	6,373.6	6,373.6	6373.6	6373.6
TANK 4	2989.8	2989.8	2,989.8	3,000.2	3001.9	3001.9
TANK B-1	5,425.0	5432.0	5,432.6	5,436.1	5437.7	5440.5
TANK B-2 I	7153.5	7179.4	6,589.3	3,971.3	3970.7	3970.2
TANK 46 I	133,657	120044	115,641	115,664	115664	115658
TANK 47	131,443	131398	131,416	131,451	131,450	131446
TANK 48	OUT OF SERVICE - TANK REPAIRS					
TANK 53 IT	91,503.3	91500.5	91,496.0	91,494.2	91,496.3	91506.5
TANK 54	132,273	132,277	132,264	132,261	132262	132274
TANK 55	81,342.1	81303.4	81,294.4	81,332.5	81335.4	813447
TANK 1811I	9026.9	9027.1	9,025.5	9,025.3	9025.4	9026.5
TANK 1811R	5951.7	595024	5,950.1	5,949.7	5950.1	5951.2
TANK 1812I	4653.9	465515	4,654.9	4,651.2	4650.3	4652.1
TANK 1812R	5791.3	5790.9	5,790.0	5,788.3	5788.6	5789.5
TANK 301	AFHE OFFLINE FOR P-200					

CHECKED AND VERIFIED DAILY TANKS DATA AND HAVE DETECTED NO LEAKS.

DAYS ___ 15 DAYS 30 DAYS SIGNATURE: [signature]

FRI 07/05/2019 TANK INVENTORY 00:00:00

TANK NAME	LEVEL	GROSS	NET	BS&W	ULLAGE	API	TEMP	VCF
TANK-0102	199' 7" 6	254,122	251,352	0.00	2,726.3	42.4	81.6	0.9891
TANK-0103	198' 4" 15	253,017	250,132	0.00	3,855.3	43.7	82.3	0.9886
TANK-0104	187' 1" 10	237,315	234,586	0.00	19,406.3	43.1	82.6	0.9885
TANK-0105	Offline	0.00	0.10	0.00	0.00	42.6	80.4	0.0000
TANK-0106	185' 4" 13	234,304	231,844	0.00	37,752.9	44.9	80.2	0.9895
TANK-0107	211' 9" 4	271,889	269,470	0.00	324.59	40.7	78.0	0.9911
TANK-0108	211' 3" 15	270,772	268,687	0.00	963.01	39.0	75.8	0.9923
TANK-0109	211' 5" 11	271,490	268,938	0.00	722.22	44.0	78.2	0.9906
TANK-0110	194' 11" 8	248,584	246,272	0.00	23,530.9	40.6	78.9	0.9907
TANK-0111	211' 7" 12	272,022	269,492	0.00	462.97	42.3	78.5	0.9907
TANK-0112	211' 9" 0	271,648	268,714	0.00	377.14	42.8	81.3	0.9892
TANK-0113	143' 3" 3	176,576	175,039	0.00	95,876.3	35.3	78.5	0.9913
TANK-0114	195' 4" 5	249,627	247,380	0.00	22,934.4	35.1	79.3	0.9910
TANK-0115	164' 7" 14	206,941	205,162	0.00	65,340.8	35.2	78.4	0.9914
TANK-0116	208' 2" 1	266,945	264,810	0.00	5,259.8	34.1	77.3	0.9920
TANK-0117	0' 1" 9	8.05	7.99	0.00	272,400	41.8	77.2	0.9914
TANK-0118	211' 9" 6	272,123	269,892	0.00	290.61	42.8	76.2	0.9918
TANK-0120	207' 1" 2	265,184	262,929	0.00	7,064.5	41.8	77.0	0.9915
TANK-1	2' 4" 2	938.80	927.63	0.00	6,259.0	44.5	83.1	0.9881
TANK-2	13' 8" 0	6,641.7	6,570.7	18.64	616.25	41.7	81.3	0.9893
TANK-3	13' 0" 2	6,443.3	6,373.7	18.14	695.72	35.9	83.1	0.9892
TANK-4	6' 4" 6	3,000.4	2,967.7	12.11	3,954.6	34.9	83.5	0.9891
TANK-B1	11' 5" 3	5,139.4	5,075.6	2,662.8	3,826.6	35.6	86.4	0.9876
TANK-B2	14' 7" 0	7,273.3	7,186.1	4.57	2,654.7	35.2	85.7	0.9880
TANK-46	21' 8" 14	76,227.9	75,442.7	1.06	59,409.1	42.7	80.3	0.9897
TANK-47	36' 8" 5	132,641	131,434	0.96	1,019.4	35.4	79.4	0.9909
TANK-48	Offline	0.00	0.10	0.00	0.00	34.4	87.0	0.0000
TANK-53	36' 8" 6	131,620	130,199	0.00	441.71	42.8	81.3	0.9892
TANK-54	37' 0" 12	133,536	132,281	1.02	396.94	35.2	80.2	0.9906
TANK-55	23' 10" 12	82,149.9	81,336.6	2.57	52,419.1	42.4	79.6	0.9901
TANK-1811R	6' 3" 9	6,009.7	5,950.2	0.11	3,236.3	31.1	81.9	0.9901
TANK-1811I	5' 1" 11	9,116.0	9,025.8	0.40	8,985.0	30.5	82.1	0.9901
TANK-1812R	7' 9" 11	7,781.4	7,705.2	0.04	1,559.6	28.9	82.0	0.9902
TANK-1812I	3' 1" 10	4,697.0	4,650.0	0.40	13,485.0	29.2	82.4	0.9900

TANK PRODUCT INVENTORY

PRODUCT	GROSS	NET	ULLAGE	HEEL	PL VOL.	ISSUABLE
DFM	1,198,271	1,165,563	195,478	33,002.8	22,446.0	1,165,268
JP5	2,239,488	2,212,424	359,171	32,184.3	6,862.0	2,207,304
JP8	1,194,206	1,174,483	129,851	27,003.3	6,283.0	1,166,824
WO	0.00	0.00	0.00	0.00	0.00	0.00
Lube2190	17,222.7	16,955.0	12,221.3	1,358.0	118.00	15,864.7
Lube9250	14,553.4	14,312.1	15,044.6	1,367.0	118.00	13,186.4
Ballast	12,451.7	12,261.7	6,481.3	3,204.6	39.00	9,247.1

BARGE / TRUCK INVENTORY

BARGE/TRUCK NAME	NET VOLUME
96-49146	1,957.0
96-49147	1,979.0
96-47913	114.00
97-47206	116.00
	0.00
	0.00
	0.00
YON-281	0.00
YON-274	0.00
YOGN-125	0.00
YON-328	0.00
	0.00
	0.00
	0.00
	0.00

PRODUCT	NET VOLUME
DFM	116.00
JP5	114.00
JP8	0.00
WO	0.00
2190	1,979.0
9250	1,957.0
BALLAST	0.00

L ROOM) PRODUCT: JP8 DATE: 16 JUL 10

WATER FT	WATER IN	GROSS BBLS	TEMP API	FACTOR NET BBLS	START FINISH	TO	GAUGE FT	GAUGE IN	WATER FT	WATER IN	GROSS GALS/BBLS	TEMP API	FACTOR NET GALS/BBLS	GAIN LOSS
0	-	201,973	82.0	.9887		pre-issue ALL LEVEL			Samples					
0	0	201.973	43.8	0	7/12 0312	& WATER CHECKS								-1
0	0	201,973	82.0	.9887	0705	L/R	WO# 45881		761		88,000	82.0	.9887	
0	0	199,672	43.8	2,275	1500		K-BAY				2,095		2,071	
					0935	L/R	WO# 4599		585G		8,000	82.0	9887	
					0945		SCHOTT		FLD		190	43.8	188	
													TOTAL	-16
0	0	131,476	42.4 51.6	.4891										
0	0	131.437	42.9 42.8	39	1015		UPDATE							-39