**Hawaiian Electric Company, Inc.**
*Giving you the power*



April 21, 2008

Mr. Chris Hoidal
Director, Western Region
Pipeline and Hazardous Materials Safety Administration
12300 W. Dakota Avenue, Suite 110
Lakewood, CO 80228

Reference: Notice of Amendment
CPF 5-2008-5007M

Dear Mr. Hoidal:

From August 30 to September 1, 2007, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) inspected Hawaiian Electric Company's (HECO) Operations and Maintenance (O&M) procedures and records for the Iwilei Pipeline System in Honolulu, Hawaii. On March 24, 2008, as a result of the inspection, HECO received a Notice of Amendment (NOA) letter from PHMSA, dated March 18, 2008.

HECO is proud of its pipeline system, but understands that improvements and enhancements are integral to the success of the program. The purpose of this letter is to provide PHMSA with a response to each of the three items discussed in the March 18, 2008 NOA. Please note that HECO intends to address each item identified to fully comply with the stated regulations.

Regarding NOA No. 1, HECO will comply with the proposed NOA, and has modified the O&M text to address the requirements of §195.226. The O&M Manual now identifies that arc burn repairs, conducted by qualified individuals, shall be approved following identification of sufficient remaining wall thickness and determined to be acceptable by an approved non-destructive testing method. The following identifies the updated O&M Manual text:

> *Arc Burn*
> *Arc burns must be removed or repaired by a qualified individual. Repair may be accomplished by grinding, provided the grinding does not reduce the remaining wall thickness to less than the minimum permitted by the material specification. If the notch cannot be repaired by grinding, an entire cylindrical section of the pipe containing the arc burn will be cut out and replaced with new pipe that meets standards as set forth in this document.*
>
> *A non-destructive test (NDT) must be performed to check if the arc burn is completely removed. This can be accomplished by etching the ground area with etching solution, such as ammonium persulfate, NITAL (3-5% of Nitric Acid in Methyl Alcohol), or other approved method. Etch the arc burn area with a 10-20% (by volume) solution of ammonium persulfate or 2-5% (by volume) solution of NITAL. Visually inspect the arc burn area for consistent coloring. A blackened spot is evidence of a metallurgical notch and indicates that additional grinding is required. Once the notch has been removed, rinse the arc burn area with water to dilute the etching solution and remove any residue from the pipe surface.*
>
> > *NOTE: The solution must be prepared by a person knowledgeable in the methods and hazards associated with mixing etching solutions and having experience in handling strong acids. It should be kept in a well marked glass or plastic bottle firmly plugged when not in use, with a label indicating the content and the date of preparation. The effectiveness of the etchant should be periodically tested by obtaining a positive indication from an arc burn, since lower metal temperatures and the age of the etchant may adversely affect the results obtained.*

*Use ultrasonic testing to determine the remaining pipe wall thickness in the area of the repair. The remaining wall thickness must be at least equal to the minimum thickness set forth in this manual. If the remaining wall thickness is less than permitted as determined by qualified individual conducting NDT inspection, an entire cylindrical section of the pipe containing the arc burn must be cut out.*

Regarding NOA No. 2, HECO has revised their O&M Manual to further clarify the operations and maintenance procedures followed during the control receipt and delivery of fuel in accordance with §195.402. The procedures are provided in Attachment 1 to this letter.

Regarding NOA No. 3, HECO has revised their O&M Manual to include the continual training program that is conducted for all personnel that perform operations and maintenance activities. The following provides the updated text that has been added to the O&M Manual identifying the training program implemented by HECO:

***7.12 Continual Training (49 CFR 195.403)***

*A continual training program has been established to ensure that HECO personnel learn the proper methods and procedures to be practiced in performing operations, maintenance, and emergency response functions. HECO personnel involved in the pipeline O&M activities shall be trained according to their roles and responsibilities. Training will include the following:*

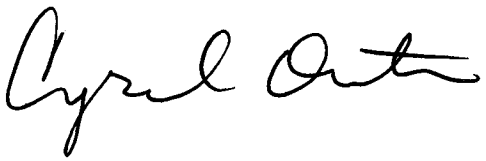
- *The operation and maintenance procedures in this manual for which they are responsible,*
- *The hazards and characteristics of the products transported (including flammability of mixtures with air, odorless vapors, and water reactions)*
- *The recognition of hazardous conditions and predicting the consequences,*
- *The likelihood and possible outcome of facility malfunctions, failures, pipeline leaks, and proper corrective action for each case,*
- *The steps to control a spill and minimize the potential for fire, explosion, toxic effect to the public and employees, and environmental damage,*
- *Proper fire fighting procedures and correct use of firefighting equipment in handling small fires,*
- *Hazards in the workplace, emergency response, first-aid, and other various safety-related training courses (i.e., asbestos and lead awareness, personal protective equipment use, electrical safety, fall protection, material handling, confined spaces, etc.).*

*This training program utilizes on-the-job training, safety meetings, notifications and tabletop drills, operator qualifications, and industry approved third-party courses. Supervisors shall maintain a thorough working knowledge of all HECO defined normal, abnormal, and emergency procedures, required under 195.402 and found in this manual, to ensure company compliance with the regulations.*

*The Training program shall be review at intervals not to exceed 15 months, but at least once each calendar year, to ensure its continued effectiveness. If the training program is determined to be ineffective, actions shall be taken to modify the program as necessary to correct the deficiencies.*

HECO looks forward to resolving each of the items addressed in the NOA and continuing to improve our Iwilei Pipeline System. Please do not hesitate to contact me with any comments or questions.

Sincerely,



Cyril Ontai
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Power Supply Services Department
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# Attachment 1

## 6.2 Communications (49 CFR 195.408)

All normal, abnormal, and emergency operations will be conducted utilizing a primary (internal telephone) and secondary (cell phone) means of voice communication between the Shift Supervisor, Senior Supervisor, on-scene Commander (or other designated representative) and the Utility Operator in the field. During all operations the Utility Operator will continue to pass pressure and flow data as well as other parameters and equipment that are deemed relevant to the condition. The Fuel Oil Transfer Log (Appendix C) will be used during each transfer to document the recordings.

In the event that an abnormal, emergency, or accident condition occurs, the Shift Supervisor, Senior Supervisor, and on-scene Commander (or other designated representative) will contact and stay in contact with the affected public and with fire, police, emergency response personnel, and public officials as necessary to pass and receive information in response to lessening the severity of or eliminating the condition altogether.

## 6.3 System Start-Up and Shut-Down (49 CFR 195.402 (c)(7))

Preparation/Planning

The Shift Supervisor and Utility Operators are responsible for the safe operation of the Iwilei pipeline while performing oil transfers. The Utility Operators perform most of the monitoring and control functions and communicate the information to the Shift Supervisors. Communication is essential during transfer. Prior to the commencement of any product transfer, the Utility Operators stationed at IFSF and HPP will test the primary and secondary means of communication and decide who will control the pumping units during the transfer.

## 6.4 Pre-transfer Procedure

Initial conditions prior to a transfer of LSFO from IFSF to HPP (Refer to Sketches 1 & 2 at end of this Section):

1. The Utility Operators at HPP and IFSF shall ensure the pressure chart recorders (coriolis meters) have new charts installed and that the recorders are powered on. Both charts and total flow must be reset to zero.
2. The Utility Operator at HPP calls the Utility Operator at IFSF and inquires about the valve positions on Diesel Oil (DO) Tanks #3 and #4 **(open U and V)** and chain valve **(R)** on the Iwilei pipeline.
3. Transfer line contains displacement oil.
4. Beginning the prior evening and continuing through the morning of the transfer, diesel oil is heated using the primary LSFO heater at HPP. (Ensure the meter bypass valve is shut.)
5. The hot (~175°F) diesel oil is re-circulated in the DO Tank #7.
6. The tank levels for tanks 2, 3, 4, 5, 6 & 7 should be read and recorded prior to the first oil transfer. The temperature readings for Tanks 2, 5, & 6 should be read and recorded.
7. The Utility Operator at HPP shall then:
   a) Confirm the alignment of the valves.

b) Ensure that the meter bypass is secure (meter should read 10,000 gals, if it does not a meter zero point must be calculated).
c) Open the meter isolation valves.
d) Slowly close valve **G** monitoring the pressure. The pressure is **NOT TO EXCEED 250 PSIG.**
e) Begin the transfer of hot diesel oil from HPP to IFSF.

8. The normal pressure reading is approximately 65 psig. The diesel oil transfer requires approximately 20 minutes for the product to reach IFSF.
9. During the transfer of diesel oil, after approximately 5,000 gals has been transferred from IFSF, the Utility Operator at HPP will contact the Utility Operator at IFSF to inquire about the pressure and flow recordings from the coriolis meter. The Utility Operator at IFSF will record the readings on the Fuel Oil Transfer Log (Appendix C).
10. At 60 gals on the meter the Utility Operator at HPP shall stop the DO pump. Once this is completed, the Utility Operator at HPP will contact the IFSF Utility Operator and communicate that the transfer is complete. The Utility Operator at HPP will close valve **T**, the meter should be zero (do not reset), and take the tank level of Tank #7.
11. After being informed that the transfer of diesel oil is complete, the Utility Operator at IFSF will close valves **R**, **U**, and **V** (come and go valves) and will take the tank levels of DO Tanks #3 and #4. The Utility Operator at IFSF will document the pressure and flow readings from the coriolis meters at IFSF and from communication from the Utility Operator at HPP.

If, during the recording of the tank levels or during transfer procedures, the tank levels are elevated outside of normal operating conditions or the tank level alarms are triggered, the procedures in Section 7.8 shall be followed. If during transfer procedures the parameters of the pressure and/or flow recordings are found at levels outside of the specified criteria, the procedures in Section 7.4 and 7.9 shall be followed to correct the abnormal operating condition and document the event.

## 6.5 Transfer Procedure

With the line now full of hot diesel oil, transfer of LSFO to HPP may begin. Valves are aligned as shown on Sketches 3, 4, & 5(6) at the end of this Section.

1. Coordinate between HPP and IFSF.
2. 

| HPP | IFSF |
|---|---|
| Open valve **G**. | Open/check open valve **P**. |
| Verify **H** is open. | Open pump discharge recirculation valve (LO or JM) |
| Line up to receive metered diesel oil into tank #7. | Partially open valve **O or M**. |
| | Close valve **D**. |
| | Check open valve **C** and **L or J** on pump suction. |
| | Check butterfly valve **F** is open and butterfly valve **G** is shut. It is important valve G is closed so that LSFO doesn't flow into the DO Tank #3. |
| | After obtaining clearance from HPP, commence pumping LSFO (slowly open valve **O or M** while shutting the respective recirculation valve until valve **O, M or N** is fully open and the respective recirculation valve is shut) to HPP (using 100 HP pump), pushing out the hot diesel oil contained in the line. |

3. At 8,500 gal the Utility Operator at HPP shall partially close in on filling valve **G** to tank #7, this will slow the delivery rate of LSFO. When pressure increases back off slightly to decrease pressure. Pressure <100 psi with flow noise audible.
4. At 9,300 gal the line is nearly purged of diesel oil, and LSFO is approaching HPP. The Utility Operator at HPP shall open filling valve **A** to tank #6 (or **D** to tank #5), and then close **G** to tank #7 completely. Check for increasing level in tank #5 (#6). Check level in tank #7.
5. For the balance of the fill period, LSFO is now entering the selected tank at HPP. The diesel flow meter by-pass shall be opened to avoid excessive wear on internal components as shown on Sketches 5 & 6.
6. During transfer, pressure and flow readings from the coriolis meters are to be communicated from the Utility Operator at HPP to the Utility Operator at IFSF at approximately 20 minute intervals; intervals are not to exceed 1 hour. The recordings will be documented by the IFSF Utility Operator on the Fuel Oil Transfer Log (Appendix C).
7. The Utility Operator at IFSF shall document the pressure and total flow recordings for both HPP and IFSF. The Utility Operator shall calculate the difference in Total Flow between both facilities. If it is determined that a difference of 50 bbls or greater is identified, operations shall be immediately shut down, the Shift Supervisor shall be contacted, and procedures in Section 7.9 will be followed.

***CAUTION**: Pressure gauges are used to monitor line pressure at both the IFSF and HPP. **AT NO TIME SHALL THE FILL LINE PRESSURE BE BELOW 125 PSIG OR EXCEED 250 PSIG**. If pressures are outside of these limits, procedures in Section 7.4*

*and 7.9 shall be followed. If, during the recording of the tank levels or during transfer procedures, the tank levels are elevated outside of normal operating conditions or the tank level alarms are triggered, the procedures in Section 7.8 shall be followed.*

## 6.6 Completion of Transfer

1. At the end of the LSFO pumping the Utility Operators at HPP and IFSF shall:

| HPP | IFSF |
|---|---|
| Inform IFSF to secure pumping of LSFO. | Secure LSFO pump. |
| When flow has stopped, zero flow meter and close meter by-pass. | Close valve butterfly valve **F** and Tank #2 valve **C** to stop flow of LSFO into the pipeline. |
| Check on status at IFSF. | Check status at HPP |
| Continue receiving LSFO in the tank in service, as diesel oil pushes it ahead. | Just prior to start of diesel oil pumping, open valve **U, V and butterfly valve G**. *Note: If valves are opened too soon, diesel fuel will gravitate to HPP through open valves, making it difficult for HPP to zero the meter.* Start pumping (using 100 HP pump) diesel oil to HPP to remove the remaining LSFO from the pipeline. |

2. When the flow meter reads 9,000 gals, the Utility Operator at HPP shall partially close filling valve **A** or **D** (whichever is the tank in-service) to slow the delivery rate of diesel oil and initiate changeover (approximately 25 psi backpressure). **DO NOT EXCEED 250 PSIG.** As the oil movement nears completion, the Utility Operators will closely coordinate the safe shutdown of the pipeline.
3. When the flow meter reads 9,600 gals the Utility Operator at HPP opens Tank #7 fill valve **G** and closes Tank #5 or #6 fill valve (**A** or **D**). **DO NOT EXCEED 250 PSIG.** The pressure gauge should read less than 25 psig.
4. At 9,960 gal the Utility Operator at HPP directs the IFSF Utility Operator to secure the transfer. Zero pressure on the transfer line pressure gauge is satisfactory. Open meter bypass and shut meter isolation valves. The HPP Utility Operator shall close valve **G** and periodically cycle to relieve pressure build-up in the line from residual heat.
5. The IFSF Utility Operator will secure the pump to stop diesel oil transfer. Close valve G and open Valve F to allow LSFO recirculation from Tank #2. Close Valves U and V at the diesel oil tanks. Open Valve C to Tank #2. Close Valve O and open pump recirculation valve. Start pump and re-circulate LSFO into Tank #2 to purge diesel from pump to protect seals. Secure the diesel oil pump. Close valve C to isolate Tank #2. Partially open recirculation valve to eliminate pressure build-up.
6. During these steps the Utility Operators will maintain their system surveillance recording pressure and flow readings to ensure the safe operation of the Iwilei pipeline. The Utility Operators will ensure that all pumping units have been shutdown prior to performing any of the necessary valve alignments to secure the pipeline from active operation.
7. The Utility Operators will power down the pressure recorders, take final tank readings at Tanks 2, 3, 4, 5, 6, &7, final temperature readings at Tanks 2, 5, & 6, and file the recorded charts at HPP for the Shift Supervisor to review.

***CAUTION**: Pressure gauges are used to monitor line pressure at both the IFSF and HPP. **AT NO TIME SHALL THE FILL LINE PRESSURE BE BELOW 125 PSIG OR EXCEED 250 PSIG unless specified**. If pressures are outside of these limits, procedures in Section 7.4 and 7.9 shall be followed. If, during the recording of the tank levels or during transfer procedures, the tank levels are elevated outside of normal operating conditions or the tank level alarms are triggered, the procedures in Section 7.8 shall be followed.*

Any unusual operating scenarios to be utilized on the pipeline will be approved by the Senior Supervisor and thoroughly discussed between the operating and dispatching groups prior to implementation. If the complexity of the proposed scenario warrants a written operating plan, one shall be developed and reviewed with all operating personnel involved following approval by the Senior Supervisor.

## 6.7 Maintaining Operating Pressure Data (49 CFR 195.404)

HECO will continuously record the discharge pressure of the pumps and the flow (in gallons) whenever the Iwilei pipeline is in operation. The recorded data will be maintained for a period of at least three years at the HPP. The Senior Supervisor is responsible for the maintenance and review of pressure data.

The Utility Operator uses the coriolis meters to monitor the intended movement of oil through the pipeline. The Utility Operators also monitor the operating pressure of the pipeline. Total flow calculations will be conducted by the IFSF Utility Operator during transfers at approximately 20 minute intervals; intervals are not to exceed 1 hour. The actuation of valves is performed by the Utility Operators under the supervision of the Shift Supervisor.

The Shift Supervisor is responsible for seeing that the following operating procedures are followed:

1. Normal booster pump operation supplying oil to the station is shown on Sketches 7 & 8. The dotted lines show the recirculation line-up on the idle tank, heater and pump. Return oil MUST ALWAYS be lined up to the tank in service.
2. Fuel tank high-level alarms are NEVER to be silenced in any other manner than by pumping the tank down to the alarm reset point.
3. The Shift Supervisor and Utility Operator are responsible for checking for the presence of water within the berm areas, particularly during periods of heavy rainfall.
4. Periodically review IFSF and HPP transfer operations to determine the effectiveness of procedures used in normal operations.