McMurdo Heliport Operations

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Active Divisions/Departments
McMurdo Area Directorate

EH&S

FEMC

Raytheon Polar Services Company
Owning Division or organizational component
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Purpose

This procedure explains the steps required for the daily operations of the McMurdo heliport. This includes—but is not limited to—opening procedures, sampling, fueling helicopters and closing the system at the end of day.

Scope/Applicability

This document applies to the McMurdo Fuels Supervisor, Foreman, Coordinator and Operators. The procedures herein also apply to the McMurdo Operations Manager and will be applied accordingly.

Terms and Definitions

Aircraft Hose

A discharge hose that runs from the pump house for the purpose of fueling helicopters.

Helicopter Nozzle

The fitting that attaches to the end of the aircraft hose for the purpose of fueling helicopters. The pilot is responsible for engaging the nozzle during all fuelings.

Bonding Cable

A wire attached to the fueling stanchion that runs the length of the aircraft hose to the helicopter nozzle for the purpose of equalizing positive and negative electrical charges between aircraft and fuel system. It must be attached to the body of the helicopter prior to the onset of every fueling and reduces the risk of spark and combustion.

Single Point Nozzle

A closed circuit aircraft nozzle used to fuel Coast Guard Helicopters.

Gammon Port

The location on each nozzle into which an actuator is inserted for the purpose of drawing samples.

Gammon Pin

Removable plug that keeps Gammon Port free of debris and keeps fuel from leaking out. It must be removed prior to inserting the actuator.

Actuator

A device used to draw fuel samples from the Gammon Port into a sample bottle.

Sump

(verb) The act of draining small quantities of fuel from a filter or tank for the purpose of visual inspection and maintenance.

(noun) Area of containment over which fuel drums are filled to prevent drips or leaks from being released into the environment.

Responsibilities

Fuels Operators

The daily responsibilities of the Fuels personnel working at the McMurdo heliport are:

- Make certain that the system is up and functioning every day that helicopters are operating.
- Obtain fuel samples for testing.
- Sump all filters on the fueling system, checking for contaminants and debris.
- Check entire system for tank, piping, hose, filter, sumps, pump, and nozzle integrity. This includes the condition of tanks, piping and associated equipment for any evidence of leaks or potential for leaks or spills.
- Keep a written log of all activities and duties performed.
- Note and immediately report anything unusual or problematic with the system or fuel being delivered to the Fuels Foreman or Supervisor.

Fuels Coordinator

Record daily tank levels and meter readings reported by the Fuels Operator opening the heliport.

Fuels Supervisor and Fuels Foreman

Immediately investigate anything unusual or any problems reported by the Fuels Operators. Any issues involving leaks or risk of spills to the environment should be immediately addressed internally or by placing an FEMC work order. Generally, FEMC shall be responsible for maintaining fixed hard piping and associated equipment. The Environmental Supervisor shall be consulted in situations involving risk to the environment.

Discussion

The McMurdo heliport is serviced by two 10,000 gallon tanks containing AN-8. Fuel is gravity fed to the heliport pump house via a two-inch hard pipe. From the pump house, fuel is routed to each of the four individual helicopter stanchions (or pads), to the Coast Guard helicopter pad, and to the drum filling station on the helipad.

Opening Tasks

The heliport fueling system must be open and fully operational by 6:45am every day that helicopters are in service.

Obtain dips on both heliport tanks and record their depth in the heliport logbook (found in the pump house). Also make a note of the tank depth information for the Fuels Coordinator. A tank no longer has sufficient fuel to perform as the service tank once the depth reaches 2’ 11”. If a tank reaches that point, switch service tanks.

Each Monday morning a bottom sample must be obtained from the service tank and presented to the Helicopter Operations supervisor in the helicopter hanger.

Once the service tank has been determined, open the valve on that tank. Open valve J-53. Visually inspect the tanks and all piping to ensure that no leaks or damage have occurred since the previous opening. Any deficiencies shall be immediately reported to the Fuels Supervisor or the Fuels Foreman.

Follow the pipeline downhill, veer toward the pump house, and verify valves J-55 and J-56 are open. J-54, which supplies the drum filling station, should be closed.

Continue following the pipeline to the pump house, and verify that the pump house inlet and outlet ball valves are open. Check the meter (situated adjacent to the pump house outlet ball valve), notate the number of gallons, and reset the meter. Record the number of gallons in the heliport logbook and also make a note of this information for the Fuels Coordinator.

Sump all filters in the pump house. Sump the canister filter into a clear glass. Sump the horizontal filter directly into a clean bucket, flushing at least one liter. Sump each filter until the fuel quality is clear and bright. If there are unusual or excessive amounts of water or debris when sumping, make a note in the logbook and report this information to the Fuels Foreman or Supervisor.

Take a clear glass and a bucket and proceed to the four fueling stanchions. During Coast Guard helicopter operations, the following procedures must be repeated at the Coast Guard fueling pad as well.

Check the piping of the fuel system to ensure there are no leaks or visible cracks in the line. Any deficiencies shall be immediately reported to the Fuels Supervisor or the Fuels Foreman.

Sump each stanchion filter into a clear glass until the fuel presents as clear and bright.

At each stanchion, check the waste jerry can. Empty it if it is ¾ full or more. At each stanchion, open the ball valve on the stanchion (blue handle) and discharge approximately 500 milliliters through the nozzle into the jerry can at that stanchion. Close the ball valve. Visually inspect each stanchion's hose and reel system, checking for leaks and damage. The hoses should be unabraided, untangled and unobstructed. The bonding cables should be in good repair. Visually inspect each sump basin daily where buried piping exits the ground. Clean basins of snow, water, or fuel as needed.

Inspect and clean each nozzles debris screen monthly.

Draw two sample bottles of fuel from one of the four regular helicopter stanchions each morning. Close the stanchion ball valve after the samples are drawn. Every day, rotate the stanchion that is sampled. For example, stanchion one might be sampled on Monday, stanchion two on Tuesday, and so on until stanchion one is again sampled on Friday. When the Coast Guard helicopter pad is in operation, it should be added to the rotation, so that fuel from all five stanchions is being sampled.

Taking a Fuel Sample From a Heliport Stanchion

Samples are taken from the Gammon port, which is found on each nozzle. It is a good idea to mark the sample bottles while they are still warm, as marking them when they are cold is difficult. Clean the area around the Gammon port so that it is free of snow and ice. Remove the Gammon pin from the Gammon port by turning it and pulling it out. Make sure the valve on the actuator is closed (perpendicular) before inserting it into the Gammon port. Insert the actuator into the Gammon port by lining up the groove on the actuator to the notch in the Gammon port. Turn it to lock it in place. Fill each sample bottle ¼ full, then shake and empty the bottle. This serves to rinse the bottle clean. Fill the sample bottles to the shoulder of each bottle (5/6 full). Remove the actuator and replace the Gammon pin. Be careful replacing the Gammon pin—it must be free of snow/ice/debris, and the inside of the Gammon port must be clean also. If the pin will not go back into the port or if it leaks, notify the Fuels Mechanic. Take the two sample bottles to the Fuels barn for testing.

Opening the Coast Guard Fueling Pad

When the Coast Guard helicopters commence land-based operations, the Coast Guard fueling pad is prepared for service. It is located above the main landing pad of the heliport, just below the Chalet (Bldg 167). Fuel is pumped to the Coast Guard pad via hard pipe and 2" Arctic Flex-wing hose. The Coast Guard helicopters use a single point nozzle for refueling.

Follow the pipeline from the pump house towards the Coast Guard pad, verifying that valves J-57 and J-59 are open. Open valve J-58, as this valve supplies fuel to the Coast Guard pad. Directly adjacent and downstream of J-58 are two more valves, both of which need to be opened. Continue following the hose up to the Coast Guard pad and locate the filter stand.

Follow the instructions above for sumping, inspecting and sampling the individual stanchions.

Check the post-filter dry-break connections, making certain that they are open.

Upon completion of sampling the Coast Guard fueling stanchion, close valve J-58. This valve should remain closed between Coast Guard refuelings.

Filling Out the Daily Checklists and the Heliport Logbook

Fill out the two PHI daily checklists located in the pump house. They are named "Flight Line Fuel Point Daily Checklist" and "Bulk Plant Daily Checklist". These record the quality and condition of the hoses, filters, nozzles, reels, ground cables, valves, pump and piping.

The Heliport Logbook is filled out each day with the tank dips, the meter reading, the number of stanchion sampled, and notes about the condition of the fueling system.

Fueling Helicopters

The main helicopter pad is completely self-service. The helicopter pilots activate and de-activate the pump by a push button at each fueling stanchion. The pilot is also responsible for opening and closing the ball valve located at each stanchion.

Prior to fueling a Coast Guard helicopter, the Fuels Operator must verify that the blue handled ball valve is open. This valve is located pre-filter on the filter assembly at the Coast Guard pad. The Coast Guard pilot is responsible for attaching the bonding cable and the nozzle to the helicopter. The Fuels Operator should verify that this has occurred before proceeding to valves and pump house. Open valve J-58 at end of the hard line, and then proceed to the pump house.

For fueling at the Coast Guard pad, a Fuels Operator is needed to activate the pump at the pump house. The ON/OFF buttons for the pump are next to the exterior electrical panel on the pump house.

Establish the desired fuel load and hand signals with the Coast Guard pilot. Once this has been confirmed and the Coast Guard pilot signals that they are ready, depress the green button to start the pump. Shut off pump by depressing the red button when signaled by the Coast Guard pilot, or if any safety issues arise. Close valve J-58.

A “Raytheon Polar Service Company – Fuel Issue Receipt” must be filled out for each Coast Guard helicopter fueling. Fill in all fields and have the pilot sign the receipt. Give the pilot white copy of the fuel receipt. Take the other two copies of the receipt to the Fuels Coordinator.

Additional Tasks

Visually inspect the drum filling station (sump) and make note of the number of Air Force and wooden pallets, the quantity of dunnage available, and the number of cargo straps on hand. If a pallet of full drums is located on the sump, make a note of it. Pass all this information along to the Fuels Coordinator. Ensure that filled drums are in good condition and no leaks are present.

Maintain the general cleanliness of the pump house, emptying drip pans as needed and tidying as required. The stanchion sumps should be kept clean and free of debris. All fuel related items at the heliport should be secured to prevent them from blowing around.

Closing Tasks

The valve on the service tank is to be closed at the end of daily operations by the PHI helicopter mechanic on duty.

References

Heliport Log Book – see details in "Records" section below.

PHI Bulk Plant Daily Checklist – see details in "Records" section below.

PHI Flight Line Fuel Point Daily Checklist – see details in "Records" section below.

Records

Record Identification, Format, & Owner	**Active Location Storage, Protection, & Retrieval**	**Facility Storage, Protection & Retrieval**	**Retention Time (Active and/or Facilities Storage)**	**Ultimate Disposition**
Heliport Log Book. Hard copy. Fuels Operators are responsible for recording the required information in the logbook.	The Heliport Log Book is kept in the heliport pump house during the helicopter flying season. During the non-helicopter flying season, the logbook is kept in the Fuels office in B-141.	Old Heliport Log Books are kept in the Fuels office in B-141.	Heliport Log Books are retained for at least 10 years in the Fuels office in B-141.	At the end of 10 years, Heliport Log Books are disposed of in white paper and burnables recycling bins.

PHI Bulk Plant Daily Checklist. Hard copy. Fuels Operators are responsible for filling out the checklist. At the end of each month, they bring the completed checklist to the Fuels Coordinator and start a new checklist for the following month.	The PHI Bulk Plant Daily Checklist is kept in the heliport pump house during the helicopter flying season. During the non-helicopter flying season, the checklist is kept in the Fuels office in B-141.	Old PHI Bulk Plant Daily Checklists are filed in the filing cabinet in the Fuels office in B-141. Copies are made at the end of each month and presented to PHI.	PHI Bulk Plant Daily Checklists are retained for at least five years in the Fuels office in B-141.	Upon disposal, the PHI Bulk Plant Daily Checklists are placed in a white paper recycling bin.
PHI Flight Line Fuel Point Daily Checklist. Hard copy. Fuel Operators are responsible for filling out the checklist. At the end of each month, they bring the completed checklist to the Fuels Coordinator and start a new checklist for the following month.	The PHI Flight Line Fuel Point Daily Checklist is kept in the heliport pump house during the helicopter flying season. During the non-helicopter flying season, the checklist is kept in the Fuels office in B-141.	Old PHI Flight Line Fuel Point Daily Checklists are filed in the filing cabinet in the Fuels office in B-141. Copies are made at the end of each month and presented to PHI.	PHI Flight Line Fuel Point Daily Checklists are retained for at least five years in the Fuels office in B-141.	Upon disposal, the PHI Flight Line Fuel Point Daily Checklists are placed in a white paper recycling bin.