

NAVAL OPERATING BASE DUTCH HARBOR & FORT MEARS,  
VALVE HOUSE H  
Dutch Harbor Naval Operating Base and Fort Mears  
Amaknak Island  
Unalaska  
Aleutian Islands  
Alaska

HABS AK-34-NN  
*HABS AK-34-NN*

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN BUILDINGS SURVEY  
ALASKA SUPPORT OFFICE  
National Park Service  
U.S. Department of the Interior  
240 West 5th Avenue, Room 114  
Anchorage, AK 99501

## HISTORIC AMERICAN BUILDINGS SURVEY

### NAVAL OPERATING BASE DUTCH HARBOR & FORT MEARS, VALVE HOUSE H

HABS No. AK-34-NN

- Location:** Dutch Harbor Naval Operating Base and Fort Mears, US Army National Historic Landmark; Amaknak Island, Unalaska, Alaska
- Date of Construction:** ca. October 1942
- Engineer/Builder:** 21<sup>st</sup> Naval Construction Battalion
- Original Owner/Occupant and Use:** US Navy at Dutch Harbor Naval Operating Base for use as a protective structure for a gate valve controlling the flow of fuel through the attached pipeline for distribution across the naval base.
- Present Owner/Occupant and Use:** Ounalaska Corporation, Unalaska, Alaska. Valve House H was vacant at the time of documentation. Pipeline valve equipment was still housed in the interior; the pipeline itself, however, had stood dormant for an unknown number of years.
- Significance:** Valve House H is a contributing feature to the Dutch Harbor Naval Operating Base and Fort Mears, US Army National Historic Landmark. This property has been extensively documented by NPS. The following Statement of Significance is taken from the NHL nomination form:
- “When Japan attacked Pearl Harbor, the naval air station at Dutch Harbor and the adjacent army post, Fort Mears, both on Amaknak Island, Unalaska, were the only defenses the United States possessed in the entire Aleutian Chain. On June 3 and 4, 1942, Japanese carrier aircraft made a two-day attack on Amaknak Island, the most serious attack on North American territory during the war. These strikes were coordinated with the enemy’s attack on Midway [Island] and the Japanese occupation of the Aleutians. Dutch Harbor continued to have important missions throughout the war. The naval air station expanded into a naval operating base, Unalaska Bay being one of the best anchorages in the Aleutians. Among its many tasks was that of controlling the steady stream of Soviet

shipping that passed through Dutch Harbor and adjacent Akutan Pass en-route to and from Siberia and the United States.”<sup>1</sup>

As such, the Dutch Harbor Naval Operating Base and Fort Mears, US Army National Historic Landmark remains the site of one of the few battles fought on American soil during the duration of World War II, and is therefore recognized by NPS for that significance. Valve House H has been considered to be a contributing building to the Dutch Harbor Naval Operating Base and Fort Mears NHL since 1998<sup>2</sup> although it is not listed in the NHL nomination inventory. In a comprehensive treatment plan for the NHL agreed upon in 1984,<sup>3</sup> Valve House H is listed as “Fuel Oil Pump Station” and categorized as vacant.

**Description:**

Valve House H is a small, one-story, cast-in-place reinforced concrete building located on the north side of Strawberry Hill, centrally located within the Dutch Harbor Naval Operating Base and Fort Mears NHL. It stands southwest and uphill from the Naval Radio Station Apartment Building and was built into the side of the hill. The hill slopes to the southeast and is oriented with the door facing south-southeast. It was constructed specifically to house valve equipment related to a pipeline running from the original fuel tanks in the southern end of the naval base to the north side of the base. The building is rectangular in form and measures 11’3” along the north and south walls, and 13’3” on the east and west walls. As the building was constructed on a slope, the height of the building, from ground surface, varies around the building. At the southeast corner, it measures 10’6” high from ground to roof; 9’0” tall at the southwest corner; 8’2” at the northwest corner; and 9’2” at the northeast corner. Despite the difference in the wall height, the building is level. The building was cast in place using Portland cement, a mixture of large smooth aggregate, and rebar for reinforcement. The building has unfinished concrete walls that are 8” thick. Evidence of the casting mold is visible on both the exterior and the interior. Horizontal imprints, measuring 0’-6” wide, were left in the concrete by the wood used to create the mold and left a faint striped pattern across all walls. The roof is flat poured concrete.

The only entrance to the building is through the door located on the south facade. The door was constructed approximately 2’-9” above ground level. This may have been in anticipation of heavy winter snow. The door is off from center as well, located approximately 1’-7” from the southeastern corner of the building. It measures 6’-11” high by 2’-9”

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<sup>1</sup>Erwin Thompson, *National Register Nomination for the Dutch Harbor Naval Operating Base and Ft. Mears National Historic Landmark*, 1984.

<sup>2</sup>Michael Salyer, Letter RE: *Proposed 2014 FUDS Actions*, 2014.

<sup>3</sup>Cole Denfield, *Defense of Dutch Harbor, Alaska from Military Construction to Base Cleanup*, 253.

wide. The door consists of a plywood door set in a 0'-2" timber frame. The door frame is supported in areas of concrete deterioration by the insertion of wood shims. Two full-surface butt hinges hold the door against the frame, which also serves the purpose of the doorstop. The door is then secured with a metal latch system and a U-bolt lock. A rectangular opening in the door sits in the bottom southeastern corner, measuring 0'-9" high by 0'-10" wide and is open to the interior. At the time of the survey, the door had been fixed to the frame with screws to deter trespassing.

There are three round openings in the concrete near the bottom of the building: one in the south façade and two in the north. These openings, measuring 1'-4" in diameter, are all designed to house the 0'-16"-diameter pipes that make up the pipeline and are lined with metal. The fuel pipe runs through the opening in the south façade and out the eastern side of the northern wall. The second opening in the northern wall is boarded over with plywood. The pipe extends from the building to both the north and south, vanishing into the ground several feet from the valve house.

The interior of the valve house is also industrial and unfinished. It is likewise rectangular and measures 12'-0" long north to south and 10'-0" wide from east to west. The interior is 11'-0" high, with flat unfinished walls and ceiling. Striations left by the wood mold for the concrete pour process are more visible on the interior than the exterior and cover the walls and ceiling. In several spots, wood splinters were left embedded in the concrete during the removal process. The door is situated 3'-7" above the concrete floor of the valve house. From the interior, the empty opening for pipe in the north wall is more easily discernible. Graffiti on the eastern interior wall reads "Paul 2000" in florescent orange spray paint, and the number "215" with an arrow is on the northern wall with an arrow pointing to the pipeline. This is likely the result of previous work done in the valve house to clean out residual chemicals.

The purpose for the valve house is to cover and shelter valve equipment necessary for the function of the pipeline. The pipeline can be seen inside the building at 2'-0" high, from the ground to the top of the pipe, giving it approximately 0'-8" of clearance from the valve house floor. The pipe is supported by metal legs and a concrete block that measures 1'-6" wide by 2'-0" long between the valve elements. It enters the valve house through the opening in the south wall, takes a ninety-degree turn to the east, then makes a second turn to the north and continues through the eastern opening in the northern wall. On the interior, there are two mechanical components: a gate valve and a rotary pump. The gate valve is located near the south wall, while the rotary pump is located near the

north wall. The oil flows into the pipeline from the south and can be controlled by means of the gate valve and pump. The purpose of a gate valve is “to slide a flat piece of metal across an opening to close it.” One of the oldest forms of control valves, it uses the pressure of the incoming oil to create a tight seal by pressing the gate against its seat. The gate is often fastened to a long screw (stem) that is threaded through a handwheel. By turning the handwheel, the screw then raises and lowers the gate to open and close the valve. The purpose of a gate valve is to block the flow of oil completely.<sup>4</sup> In Valve House H, the gate valve measures approximately 5’-2” high, 2’-0” wide, and 1’-0” long. The handwheel is no longer present, but the remaining elements are clearly discernible.

The pump, located 1’-9” north of the gate valve, is a rotary pump. By the action of turning, the pump forces the oil through the axis of the screw-like apparatus on the interior. These are often used with high viscosity oil lines to help the sluggish oil flow more smoothly through the pipe.<sup>5</sup> The pump here measures approximately 2’-0” long and 2’-0” wide.

#### **History:**

Valve House H is located on the Dutch Harbor Naval Operating Base and Fort Mears, US Army National Historic Landmark. This base, located on Amaknak Island, Unalaska, Alaska, was the first military defense location in the Aleutian Islands during World War II, intended to provide a layer of protection for the US territory of Alaska against impending Japanese aggression. Prior to the military buildup leading into World War II, an agreement between Japan and the US signed in 1922 placed the Aleutians in a de-militarized status. This agreement, known as the Washington Naval Treaty, expired in 1936 and was not renewed, in part due to the rising expansion of Japanese territory in the South Pacific.<sup>6</sup> Escalating tensions during the 1930s resulted in recommendations for the fortification of Alaska, and the Aleutians in particular. In 1938, the US Navy called for naval and submarine stations to be constructed at Sitka, Kodiak, and Dutch Harbor in the Aleutians. Authorization for the bases was given and construction began at Dutch Harbor in 1938.<sup>7</sup>

Unalaska and Amaknak Island had housed US fishing interests prior to the military arrival in 1940. The Coast Guard kept a garrison at

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<sup>4</sup> Thomas O. Meisner and William L. Leffler, *Oil & Gas Pipelines in Nontechnical Terms* (Tulsa, Oklahoma: PennWell Corporation, 2006), 239-240.

<sup>5</sup> Meisner and Leffler, *Oil & Gas Pipelines in Nontechnical Terms*, 248-249.

<sup>6</sup> Sandra McDermott Faulkner and Robert L.S. Spude, *Naval Operating Base, Dutch Harbor and Fort Mears, Unalaska Island, Alaska*, HABS project Report, NPS, Alaska Region, Anchorage, Alaska, 1987, 15.

<sup>7</sup> Thompson, *National Register Nomination, 1984*, 3.

Unalaska, and the Northern Commercial Company (NCC) had a fueling station on Amaknak Island complete with docks, oil tanks, and water systems. In 1940, the Navy purchased this facility and the adjoining 127 acres from NCC and proceeded to use the existing facilities for their purpose. Construction officially began in July 1940 and was undertaken by civilian contractor Siems Drake Puget Sound. The Dutch Harbor Naval Section Base was commissioned on January 1, 1941. The Naval Air Station was officially commissioned on September 1, 1941. Due to lack of level ground, the Naval Air Station was originally used only by seaplanes and Catalina flying boats. Two concrete seaplane ramps were constructed to this purpose.<sup>8</sup>

The first troops arrived in May 1941. These troops consisted of both army and naval personal, and Fort Mears Army Base, located adjacent to the naval facility, was officially commissioned on September 1, 1941. In May 1942, a small gravel runway was completed, allowing the facility to be used by land and seaplanes alike.<sup>9</sup> The runway was a temporary solution, as it was short and utilized arresting and catapult gear to launch planes for takeoff and slow them on landing. A more permanent solution was completed in July 1942, with the construction of a permanent runway carved from the base of Mt. Ballyhoo. This runway is currently in use for the commercial airport at Dutch Harbor.

On June 3 and 4, 1942, Amaknak Island was the target of the most serious air attack on US territorial soil. Utilizing aircraft carriers cruising east along the Aleutians, the Japanese launched a series of strikes at the base over the course of two days. The attack was meant to correspond with attacks on Midway, to divert attention away from the more serious assault at Midway, and to break communication lines along the Northern Pacific. By this time, the US had broken Japanese coded signals, and were able to give warning to the soldiers stationed at Dutch Harbor. Also playing into US favor was the weather, with low-hanging clouds and fog hampering Japanese bombers in locating targets. Eventually, hampered by bad weather and having completed their original purpose of distraction and disruption, the Japanese withdrew to the west to provide cover for troops landing on Kiska Island. During the course of the two days, 43 US soldiers were killed and the destruction toll was limited to a barracks, several army buildings, a warehouse, a naval gun embankment,

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<sup>8</sup> Faulkner and Spude, *Naval Operating Base, Dutch Harbor and Fort Mears, Unalaska Island, Alaska*, 19.

<sup>9</sup> Faulkner and Spude, *Naval Operating Base, Dutch Harbor and Fort Mears, Unalaska Island, Alaska*, 19.

and four new fuel tanks holding 22,000 barrels of oil.<sup>10</sup> Both sides also lost planes in the attack.

A flurry of construction and reconstruction followed in the wake of the attack. It was believed by the US that the Japanese intended to strike again. "Fort Mears reached its peak strength on October 20, 1942 with 9,976 officers and men on its morning report."<sup>11</sup> October 1942 also saw the arrival of the 21<sup>st</sup> Naval Construction Battalion (Seabees), the first of several. This battalion replaced the original civilian contractors, who had been evacuated from the island as a result of increasing Japanese aggression. By 1944, when the base was deemed to be complete, facilities included "seventeen office buildings, a 200-bed hospital, net depot, and a facility for provisioning fleet units." There were also a total of seven docks in operation, including a submarine dock.<sup>12</sup> In addition to providing a militarized defense for the Aleutians, Dutch Harbor also provided a vital link between the US and the Soviet Union. Ships and submarines traveling between the two embattled countries stopped at Dutch Harbor to refuel, resupply, and receive recognition signals. Following the war, "the submarine facility was decommissioned in May 1945 and the air station was reduced to a naval air facility in June. The last naval personnel left Dutch Harbor in 1947, and the naval operating base was decommissioned at that time."<sup>13</sup> Finally, in 1952, the remaining facilities were declared surplus and sold, allowing Dutch Harbor to become a haven of commercial fishing in the Aleutians.

The US Navy began utilizing pipelines for fuel distribution in 1915. Expanded upon during the First World War, by 1930 large military airfields had pipeline distribution systems already installed. The lines had been developed with the aid of the oil industry, and included a system of flow regulation that used the pressures in the line to control the flow. This system meant that flows could be turned on and off at the delivery points regardless of the length or elevation of the line. Pipelines, however, were constructed using sections of large, heavy pipe screwed or welded together, and did not lend well to forward operating bases. Experimentation by members of the oil industry during the build up to the hostilities of World War II, however, produced a lighter-weight pipe that could be easily transported, assembled, and disassembled as need required. This lighter system could be used to transport fuel from railroad

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<sup>10</sup> Thompson, *National Register Nomination*, 1984, 4.

<sup>11</sup> Faulkner and Spude, *Naval Operating Base, Dutch Harbor and Fort Mears, Unalaska Island, Alaska*, 25.

<sup>12</sup> Faulkner and Spude, *Naval Operating Base, Dutch Harbor and Fort Mears, Unalaska Island, Alaska*, 19.

<sup>13</sup> Faulkner and Spude, *Naval Operating Base, Dutch Harbor and Fort Mears, Unalaska Island, Alaska*, 21.

freight cars to the final distribution point without need of additional vehicles.<sup>14</sup>

The fuel oil pipeline system, of which Valve House H is a major component, was likely constructed in 1942, when records indicate that five concrete fuel oil tanks were constructed along with the runways.<sup>15</sup> This pipeline would then have provided fuel oil to the various docks and runways. As far as can be determined, it was the only valve house serving the pipeline along its route. It was constructed at the highest elevation of the pipeline, likely negating the need for further valves except at the fuel line termini. It was the only valve house recorded in the building inventory survey completed in 1984.<sup>16</sup> It is not known when the pipeline was officially decommissioned; the naval base, however, was decommissioned in its entirety in 1947. No record could be found of the use of the pipeline after that date.

### Sources:

- Coll, Blanche D, Jean E. Keith, and Herbert H. Rosenthal. *United States Army in World War II: Technical Services: The Corps of Engineers: Troops and Equipment*. United States Army Center of Military History, Washington, DC, 1988.
- Denfeld, D. Colt. *Defense of Dutch Harbor, Alaska: From Military Construction to Cleanup*. Alaska District, US Army Corps of Engineers, Anchorage, Alaska, 1987.
- Faulkner, Sandra McDermott and Spude, Robert L.S. *Naval Operating Base, Dutch Harbor and Fort Mears, Unalaska Island, Alaska*. HABS Project Report. National Park Service, Alaska Region, Anchorage, Alaska, 1987.
- Meisner, Thomas O., and William L. Leffler. *Oil & Gas Pipelines in Nontechnical Terms*. PennWell Corporation, Tulsa, Oklahoma, 2006.
- Salyer, Michael. Letter RE: *Proposed 2014 FUDS Actions, Unalaska, Alaska*. Alaska District, US Army Corps of Engineers, Anchorage, Alaska, 2014.
- Thompson, Erwin. *National Register Nomination for the Dutch Harbor Naval Operating Base and Ft. Mears National Historic Landmark (UNL-120)*. National Park Service, Denver Service Center, Colorado, 1984.
- U.S. Army Corps of Engineers (USACE). *Memorandum of Agreement Between the U.S. Army Corps of Engineers and the Alaska State Historic Preservation Officer (AKSHPO), Regarding the Removal*

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<sup>14</sup> Blanche D. Coll, Jean E. Keith, and Herbert H. Rosenthal, *United States Army in World War II: Technical Services: The Corps of Engineers: Troops and Equipment*, United States Army Center of Military History, Washington, DC, 1988, 417-423.

<sup>15</sup> Faulkner and Spude, *Naval Operating Base, Dutch Harbor and Fort Mears, Unalaska Island, Alaska*, 19.

<sup>16</sup> Thompson, *National Register Nomination*, 1984.

*of Valve House H (UNL-569), a Contributing Element to the Dutch Harbor Naval Operating Base and Ft. Mears National Historic Landmark (UNL-120) for the Formerly Used Defense Sites (FUDS) Project.* USACE Alaska Region, 2014.

**Historian:** Casey Woster, M.A., Architectural Historian TNSDS, October 2014

**Project Information:** The U.S. Army Corps of Engineers (Corps), through the Formerly Used Defense Sites (FUDS) program, is planning to remove pipeline, transformer vaults, and contaminated soils within the boundaries of the Dutch Harbor Naval Operating Base and Fort Mears National Historic Landmark on Amaknak Island, near Unalaska, Alaska. The established Memorandum of Agreement (MOA), under the Alaska FUDS program, specifies that the Corps and the Alaska State Historic Preservation Officer (SHPO) have agreed that the Corps will proceed with the undertaking to demolish Valve House H even though it is an agreed upon adverse effect on the NHL. As such the Corps has agreed to implement the following stipulations in order to mitigate said effects: Documentation of Valve House H (UNL-569) as a contributing element of the Dutch Harbor Naval Operating Base and Ft. Mears NHL (UNL-120) will include a short format report that follows the Historic American Engineering Survey (HAER) guidelines. This will include high-quality, digital photographs that will include views of the principal facades, setting, additions, alterations, intrusions, interior views, landscaping and unusual features as per the National Register Photo Policy Factsheet. The report will also include historic context, as-built drawing and documentation of the pipeline system with additional components compiled from the existing information<sup>17</sup>.

The MOA further stipulates that the documentation materials will be submitted to both the SHPO and the National Park Service (NPS) for comments. The final submittal of the HAER documentation will consist of an original plus copy of the short format report to be submitted to the National Archives and Records Administration (NARA) Seattle Branch and one copy each submitted to the SHPO and also Ounalashka Corporation. Original copies with logs of the photographs will be submitted to NARA with electronic copies and photo logs submitted to the SHPO and also the Ounalashka Corporation. Any other copies will be submitted to interested parties upon request<sup>18</sup>.

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<sup>17</sup> USACE, *Memorandum of Agreement Between the U.S. Army Corps of Engineers and the Alaska State Historic Preservation Officer*, 2014.

<sup>18</sup> USACE, *Memorandum*, 2014.