

Naval Air Station Fallon, Fuel Tanks

(Building No. 820)

800 Complex, Off Carson Road near intersection of Pasture
and Berney Roads

Fallon

Churchill County

Nevada

HABS
NV-33-C

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

**Historic American Buildings Survey
National Park Service
Western Region
Department of the Interior
San Francisco, California 94107**

HISTORIC AMERICAN BUILDING SURVEY
NAVAL AIR STATION FALLON
FUEL TANKS (BUILDING 820)
HABS NO. NV-33-C

Location: The 800 Complex (Fig. 1) is located in the southeast corner of the Naval Air Station Fallon, Fallon, Churchill County, Nevada. The Fuel Tanks (Building 820) are located northeast of the Radar Tower (Building 804) and north of the Power Plant Building (806).

USGS Grimes Point Quadrangle (7.5')
UTM Coordinates: 11 4362998 351850

Present Owner: Naval Air Station Fallon
4755 Pasture Road
Fallon, Nevada 89496-5000

Present Occupant: Navy.

Present Use: Presently used as storage.

Significance: The Fuel Tanks (Building 820) are significant due to their association with the 800 Complex. The Air Force-built buildings in the 800 Complex are significant for their role in the Semi-Automatic Ground Environment (Project SAGE) air defense system, and as exceptionally important examples of the architecture of the Cold War. The period of significance of the property extends from 1961, when construction started, through its abandonment by the Air Force in 1975. Built in 1961, the Fuel Tanks served as support for the Fallon Air Force Station, especially the fallout shielded Building 800. The Fuel Tanks (Building 820) are proposed to be demolished and the pipes from the Fuel Tanks to Building 806 will be cut at the pipe boxes (Fig. 2). Interior to Building 806, the floor level tanks are proposed to be removed as will the lower level Day Tanks and Make-up Water Tank (Fig. 3).

PART 1. HISTORICAL INFORMATION

A. Physical History:

1. **Date of erection:** The Fuel Tanks (Building 820) was constructed in 1961 (Mikesell 1998).
2. **Architect:** The architectural firm responsible for designing this type of fallout shelter is Richard J. Donovan Inc., Architects-Engineers, of Winchester, Massachusetts.
3. **Original and subsequent owners:** The original owner was the Air Force who used the 800 Complex as the Fallon Air Force Station from 1962 to the early 1970's. After the Air Force left, NAS Fallon has been the owner.
4. **Builder, contractor, suppliers:** Unknown
5. **Original plans and construction:** The Fuel Tanks (Building 820) appears as it did when constructed and has not been altered.

6. **Alterations and additions:** The Fuel Tanks (Building 820) appears as it did when constructed and has not been altered.

B. Historical Context

1. **Description:** Descriptive information for the 800 Complex and Fuel Tanks (Building 820) was gathered from the *Inventory and Evaluation of National Register Eligibility for Cold War-Era Buildings and Structures, Naval Air Station Fallon, Nevada* (Mikesell 1998). The Fuel Tanks (Building 820) is the power plant for the 800 Complex on what was the Fallon Air Force Station. The 800 Complex includes a group of buildings and structures located near the southwestern corner of Main Side at Naval Air Station (NAS) Fallon. The fenced complex is about 5.5 acres in area and includes nine permanent buildings, fuel tanks, seven trailers, and temporary buildings. Of these buildings, only buildings 800, 801, 802, 804, 806 and 820 contribute to the significance of this property.

The 800 Complex is a distinctively Cold War property. It was built to house a state-of-the-art computer, radar interpretation system, and counter-measure control office, designed to assume control of part of the American response to a nuclear attack, should the primary control center be disabled. Although it is not the only such Back-up Interceptor Control (BUIC) building, there can be no doubt that the building was associated directly with leading edge technologies and strategies. Architecturally, the heavily fortified buildings are uniquely Cold War structures, individually and as a group. Building 800, which housed BUIC system, was built to withstand a near-miss nuclear attack. The 100-Man Fallout Shelter (Building 802), the bomb shelter, was similarly designed to be "fallout shielded." The Power Plant was built to power the radar and computer as that they drew more power than was available on the grid at that time. The 800 Complex represents exceptional significance within the Cold War context on the basis of its close association with an important element of the Cold War defense strategy and because it embodies the distinctive architecture of the Cold War.

2. **Historical information:** Descriptive information for the 800 Complex and the Fuel Tanks (Building 820) was gathered from the *Inventory and Evaluation of National Register Eligibility for Cold War-Era Buildings and Structures, Naval Air Station Fallon, Nevada* (Mikesell 1998). The significance of Fuel Tanks (Building 820) is tied to the significance of the whole of the 800 Complex. What follows is a review of the 800 Complex at NAS Fallon in history.

The 800 Complex includes remnants of an Air Force Station built within the boundaries of a Navy Auxiliary Air Station. The Air Force first came to Fallon in 1956, when the 858th Aircraft Control & Warning (AC&W) squadron was assigned to what was called Fallon Air Force Station. The squadron initially operated mobile radar units. In 1959, however, plans were approved for construction of a permanent radar tower, unit and necessary control and auxiliary buildings. These permanent buildings were completed by 1961 and all still exist.

3. **Function of the 800 Complex with the SAGE system:**

The 800 Complex at NAS Fallon was a BUIC I, II and III back-up unit to the Winnemucca, Nevada Semi-Automatic Ground Environment (SAGE) Control Center. A BUIC was capable of handling the important work of the SAGE Control center, should the control be destroyed or disabled. There were two components to the operation at the 800 Complex: day-to-day monitoring of the skies and the presence as a back up for the

control of American counter-measures in the event of an air attack. The first function operated daily; the second function was fortunately never needed.

The Air Force moved on to the Navy Station at Fallon (then a Naval Auxiliary Air Station) in 1956, at about the same time that the Navy was just beginning to build a permanent station there. The Air Force would call the facility Fallon Air Force Station. The function of this facility changed over time. Initially, the Air Force assigned the 858th AC&W Squadron. It was tasked with the operation of two sets of mobile radar units: an AN/MPS-7 and an AN/MPS-14 unit. Briefly in 1959, an AN/FPS-3 unit was assigned there as well. The AN/FPS-7 was one of the first radar system designed specifically to be compatible with the SAGE network; General Electric built it. The AN/FPS-14 was what was called "gap finder" radar and was also specifically built to be SAGE compatible; Bendix built it.

In the early 1960s, the mission of the Fallon Air Force Station was upgraded substantially. The bulk of the 800 Complex was built in 1961. The mission of the 1961-built station was to operate an AN/FPS35 radar unit. The specifications of the AN/FPS-35 are discussed below. Briefly, this unit was one of the more ambitious SAGE-compatible radar units from the early 1960s: it was first deployed in 1960, making Fallon Air Station one of the first stations to use it. The movable radar antenna weighed seventy tons and drew an enormous amount of electric power. The construction at the 800 Complex reflected the needs of this huge unit. The radar tower, Building 804, was large chiefly because it was designed to hold this bulky antenna. The external power plant, Building 806, as well as the fuel tanks, were constructed because there was insufficient power in the local grid system to supply the antenna, and to ensure a power supply in the event the local grid was inoperable. The operations building, Building 800, was initially a lightly reinforced concrete block building designed to control the radar operations and feed the data to other SAGE-related installations, probably to the SAGE control center in Winnemucca.

In 1962 (only one year after the initial construction), Building 800 was upgraded with a "Concrete Fallout Shielding." The new construction did not increase the interior space of the building. Rather, the work was entirely exterior to the 1961 concrete block building. The new construction included a thick (generally 1' 2") poured-in-place reinforced concrete wall around the exterior, leaving a three-foot airspace between the new and old walls. The functions of the interior rooms did not change between 1961 and 1962; the improvement, however, suggests that the Air Force placed great value on the data coming from the radar at this site.

The building was dramatically upgraded in 1965 and 1969 to transform it into a BUIC, or back-up SAGE center. The upgrade involved construction at the east end of the original building. As noted earlier, the BUIC program included three phases, called BUIC I, BUIC II, and BUIC 111. The work on Building 800 was designed to upgrade it to a BUIC III status.

The 1965 and 1969 additions had two things in common: they were heavily reinforced ("fallout shielded") and they were dominated by computer rooms and a large radar screen

display room. The BUIC II and III systems apparently relied upon a Burroughs-built computer that was compatible with the IBM-built SAGE computer. The computer room, built in 1965, included the thickest walls built at Building 800 - 1' 4" - and was accessible from two small doors. A data display room, which accommodated twelve radar screens, was a thickly reinforced room measuring 40' x 40'. The 1969 construction brought Building 800 to its current appearance and included some rooms that were not defended to fallout-proof conditions. These included a briefing room and an entry vestibule. By 1969, the building included the following rooms that had fallout-proof walls: the telephone line room; mechanical rooms; the computer room; the data display room; a room for programmers; and incidental rooms, such as the bathrooms' located near the center of the building.

Other construction during the 1962-1969 period supports the high-security nature of the operation. The 100-Man Fallout Shelter (Building 802), was built in 1962, at the time in which Building 800 was fallout shielded." The guard shack, Building 801, was built in 1961 and later expanded.

The 800 Complex had two major functions: the operation of the radar unit; and the BUIC operation. The two were related but not identical. The AN/FPS-35 radar was but one of many radar units in the area, although it was a particularly powerful (although error-prone) unit. The AN/FPS-35 was operated jointly by the Air Force and the FAA after about 1965. The radar unit was not protected in the manner of Building 800: the antenna was totally exposed and the walls of the tower on Building 804 are not "fallout shielded." It may be concluded that the BUIC function of Building 800 was regarded as more important than that of the radar set nearby.

The total operation at the 800 Complex, built no doubt at great expense, was surprisingly short-lived. The AN/FPS-3: antenna was removed in 1971: two generations of smaller radar units have been used since then. The Air Force abandoned the entire 800 Complex at about that time, turning the radar unit (Building 804) over the FAA and the rest of the buildings to the Navy. Building 804 is still used as a FAA radar tower. The range department of Naval Strike and Air Warfare Center uses building 800. The other buildings inside the 800 Complex gate are used for incidental purposes, including a Sea Air and Land (SEALS) base, recently established in the 800 area (Mikesell 1998:15-17).

PART II. ARCHITECTURAL INFORMATION

A. General Statement

- 1. Architectural character:** Architectural and Engineering information for the 800 Complex and the Fuel Tanks (Building 820) was gathered from the *Inventory and Evaluation of National Register Eligibility for Cold War-Era Buildings and Structures, Naval Air Station Fallon, Nevada* (Mikesell 1998) and from the Fuel Tanks (Building 820) design plans (Lockard, Casazza and Parsons 1959). The Fuel Tanks (Building 820) are sheet metal fuel tanks inside of a five foot concrete containment wall. The fuel tanks supplied fuel for the generators in Buildings 806.

2. **Condition of fabric:** The condition of the Fuel Tanks (Building 820) is roughly unchanged since construction. Wear on the building makes it look its age.

B. Description of Exterior:

1. **Overall dimensions:** The overall dimensions of the Fuel Tanks (Building 820) are 30' in diameter and 17' tall. The Fuel Tanks (Building 820) are one story tall.
2. **Foundations:** The foundation of the Fuel Tanks (Building 820) is 1'-6" wide underneath the metal wall of the tank and 4'-6" tall.
3. **Walls:** The walls are sheet metal. Each tank has a manhole on the side and a measuring gauge.
4. **Structural system, framing:** The structural system is the steel tank itself.
5. **Porches, stoops, balconies, bulkheads:** None.
6. **Chimneys:** One vent pipe on top.
7. **Openings:**
 - a. Doorways: One shell manhole on the side.
8. **Roof:** The roof is the same sheet metal as the sides are.

C. **Description of Interior:** There is no human use of the interior.

D. Site:

1. **General setting and orientation:** The general setting of the Fuel Tanks (Building 820) is relatively flat, cold desert environment of shadscale vegetation. The immediate surroundings are a bladed flat compound with the original Fallon Air Force Station buildings and the more recent additions. The Fuel Tanks (Building 820) face northeast on their short side and is located on the north end of the 800 Complex.
2. **Historic landscape design:** The historic landscape design varies only by having the original 800 complex buildings, buildings 800, 801, 802, 804, 806 and 820.
3. **Outbuildings:** There are no outbuildings associated with the Fuel Tanks (Building 820).

Part III. Sources of Information

Lockard, Casazza and Parsons

- 1959 United States Air Force, Power Plant for AC&W Stations. Prepared by Lockard, Casazza and Parsons and Associates, Architects and Engineers, Reno, Nevada.

Mikesell, Stephen

- 1998 Inventory and Evaluation of National Register Eligibility for Cold War-Era Buildings and Structures, Naval Air Station, Fallon, Nevada. Prepared for Department of the Navy, Western Division, Naval Facilities Engineering Command, San Bruno, California.

Part IV. Project Information

This report is a mitigative report required by the Memorandum of Agreement between the Naval Air Station Fallon, the Nevada State Historic Preservation Office and the Advisory Council on Historic

Preservation for the removal of fuel tanks from the Fuel Tanks (Building 820). The photographer is Mr. Dave Chawla of Las Vegas, Nevada.

Report Prepared By: C. Cliff Creger
Archaeologist
Natural Resources/Real Estate Division
Public Works
Naval Air Station Fallon
4755 Pasture Road
Fallon, Nevada 89496-5000

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