After taking over aids to navigation, the Lighthouse Board initially erected many lighthouses with their own crews. Contractors built the others with close supervision by the district engineer. When the plans and specifications, which were much more extensive and detailed than those previously prepared by the fifth auditor, were completed and approved, the project was issued for bid. With the exception of screwpile lighthouses that were built in the district depots, lighthouses after the 1870s were usually erected by contract. The Lighthouse Board did not scrimp on construction costs; consequently, their lighthouses have lasted far longer than those erected in the first part of the 19th century.

Working with lighthouses attracted a number of government officials. Lt. George G. Mead, who later achieved fame as the commander of union forces at the battle of Gettysburg, assisted Maj. Hartman Bache in the construction of the Brandywine Shoal screwpile lighthouse (1850), Delaware Bay, and went on to complete the construction of the Carysfort Reef Lighthouse (1852), the first of the tall lighthouses on the Florida reefs, and subsequently constructed the Sombrero Key (1858) and Sand Key (1853) lighthouses in the same vicinity. Mead supervised the construction of Absecon Lighthouse (1957), New Jersey, and surveyed and recommended the replacement of the Barnegat Lighthouse (1857), New Jersey, with a first-order tower. He designed Jupiter Lighthouse (1860), and assisted in designing Seahorse Key Lighthouse (1854), both in Florida. Mead also invented a five-wick, first order, hydraulic lamp used in Fresnel lenses.

Hartman Bache, a distinguished engineer of the Army Corps of Topographical Engineers, built the second screwpile lighthouse in the United States, the Pungoteague River Lighthouse (1854) in Chesapeake Bay. Major George H. Elliot, who in the early 1870s served as Engineer/Secretary of the Lighthouse Board, designed the conical cast iron tower for Hunting Island (1875), South Carolina. Curved iron plates of identical dimensions were cast with flanges extending along each edge on the inner surface of the curve and knees were cast inside the curve for support. At the site, the plates could be connected by wrought iron bolts through holes in the flanges, forming rings. The rings could be bolted together vertically with the lower rim of each course overlapping the one below it which fit into a half-round cast ridge. By varying the size of the plates and number of courses, lighthouses of different heights and dimensions could be made. Architectural features, such as door and window openings, were cast into the integral part of a plate so when fastened together an attractive, uniform pediment or hood could be produced.[146]

During the construction of the Ponce de Leon Inlet Lighthouse (originally Mosquito Inlet) (1887), Florida Lighthouse District Superintendent of Construction, Herbert Bamber, invented an adjustable, moveable Working Platform that increased the efficiency and ease of constructing masonry towers. Individual bricks were left out of the exterior tower wall every 10 feet vertically and horizontally so that supports for the platform could be set into the holes. Once the tower was complete, the holes were filled as the platform was lowered.

Keepers as Heroes

Some lighthouse personnel over the years became heroes. In 1856, Abbie Burgess Grant tended the Matinicus Rock Lighthouse, Maine, when her father, the keeper, was caught ashore when a storm came up. She also cared for an ailing mother in that memorable storm. Much has been written about her, especially in children's books. Ida Lewis, daughter of a lighthouse keeper and keeper herself at Lime Rock, Rhode Island from 1879 to 1903, is the most famous of light keepers for the 18 to possibly 25

[146] J. G. Barnard, "Lighthouse Engineering as Displayed at the Centennial Exhibition," American Society of Civil Engineering Transactions, volume 8, 1879, p. 70.

lives she saved. In 1881, she received a gold lifesaving medal. Much was written about her, and she became so famous that former president Ulysses S. Grant, Admiral George Dewey, and other notables visited the Lime Rock Lighthouse to pay homage to her. When she retired, the Rhode Island legislature officially changed the name of the island on which the light station stood to Ida Lewis Rock. The Lighthouse Service then changed the name of the light station to Ida Lewis Lighthouse, the only such honor ever given to a lighthouse keeper. Deactivated in 1963, the structure now serves the Ida Lewis Yacht Club.

Another admirable light keeper is Kate Walker. Her husband, keeper of the Robbins Reef Lighthouse in New York Inner Harbor, was taken ill and had to go to the hospital. On departing he said, "Mind the light, Katie." He died in the hospital, and Mrs. Walker was eventually made keeper of the light. The quintessential working mother, each morning rowed one mile to Staten Island with her two children so they could go to school, and retrieved them in the afternoon. She continued to keep the light until reaching age 73 when she retired. She lived at the lighthouse for 33 years -- 23 of them as keeper. She estimated she rescued, over the years, 50 people, mostly fishers who, caught in storms, either had their boats overturned or crashed on Robbin's Reef.[147]

Gold and silver lifesaving medals were given to keepers who displayed extraordinary heroism in rescuing victims of the sea. Mark A. Hanna, keeper of the Cape Elizabeth Lighthouses, Maine, was awarded a gold medal for rescuing two seamen from a wrecked schooner in a snowstorm. Thomas J. Steinhise, keeper of the Seven Foot Knoll Lighthouse in Chesapeake Bay, Maryland, was awarded a silver medal for rescuing six members of the crew of a sinking tug in a northeast storm. The waves were crashing over the light station's small boat as he struggled to pull the men aboard.[148]

[147] Cliff Gallant, "Mind the Light, Katie," *The Keeper's Log*, v. III, no 3, pp.16-18.

[148] Holland, *America's Lighthouses*, p. 52; Seven Foot Knoll file, Lighthouse files, Maryland Historical Trust.

Description

The U.S. Lighthouse Service in 1915 regarded lighthouses as lights where resident keepers were employed.[1] There are many aids to navigation that were never manned; these are not included in our definition of a light station. In addition to the tower and keeper's quarters, a light station might also consist of an assistant keeper's quarters, fog signal building, oil house, workshops, cisterns and water catchment basins, storage buildings, barns/garages, boathouse, tramways, docks, and other support structures (see Lighthouse Components, page 32). As of 2002, the National Park Service's computerized inventory of historic light stations included 584 lighthouse towers that are 50 years old or older. Of these, the Coast Guard managed approximately 312, 214 of which have already been listed in or determined eligible for listing in the National Register of Historic Places.[2]

Significance

Lighthouses are one of, if not the most, romantic symbols of our maritime heritage. By preserving lighthouses, we preserve for everyone a symbol of that chapter in American history when maritime shipping was the lifeblood of the nation, tying isolated coastal towns and headlands through trade to distant ports of the world.[3] Historic and cultural resources represent our nations patrimony. Their owners have an entrusted legal and moral responsibility to care for them. Each lighthouse is special in the context of its geographic location, architectural style, and history. Where the historic integrity of the light station remains intact, the visitor can experience this aspect of our maritime heritage.

Registration Requirements

What makes a lighthouse historic? Identifying historic lighthouses

Not all lighthouses or all structures at light stations are historic nor do all warrant preservation. But how does one determine historic significance of light station properties? How can one be certain that a light station or portion of a light station (only one or more structures of a light station versus a entire light station) warrant preservation? Perhaps the best method for determination, and the method required by the National Historic Preservation Act, is the criteria established for inclusion of properties in the National Register of Historic Places. Nearly 70 percent of all lighthouses in the United States (Coast Guard owned and otherwise) over 50 years old are either listed in the National Register of Historic Places or are determined eligible for listing, and the number is climbing as lighthouses and other light station structures are added to the list.

The National Historic Preservation Act of 1966 authorizes the Department of Interior to establish, maintain, and expand a National Register of Historic Places. This list is considered the official list of

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[1] de Gast, p. viii; and *United States Lighthouse Service 1915* (Government Printing Office, Washington, D.C., 1916), p. 18.

[2] Figures derived from the National Maritime Initiative computerized inventory of historic light stations, February 2002.

[3] Deborah Davis, Keeping the Light: A Handbook for Adaptive Re-use of Island Lighthouse Stations (Rockland, Maine, Island Institute, 1987), p. 2.

the Nations cultural resources worthy of preservation and is maintained by the National Park Service. The Register includes over 68,000 properties that have been recognized as having historic, architectural, archeological, engineering or cultural significance, at the national, state, or local level; this list grows steadily as more properties are identified and nominated each year. The nominations are maintained both on paper and in a computerized database.

Hierarchy of character-defining features

The many structures and features of a light station should be considered cumulatively in accessing its integrity. The tower is vital to defining the station. Keeper's quarters are universal to light stations; sound signal buildings are not. The secondary structures that support the operation of the aid to navigation are significant but their exclusion does not necessarily preclude eligibility for listing in the National Register. The following is a priority listing of the physical elements to consider.

1. *Tower*: Minimum consideration is daymark feature, i.e., shape and color to identify it to mariners. Does the tower still have its daymark characteristic? Daymark does not necessarily include presence of a lantern. For example, Bald Head Lighthouse meets only that minimum requirement.

a. *Lantern*: Ideally the light tower should have a lantern used during its period of significance. Lanterns did change over some lights' operational history to accommodate different lenses and operational requirements. An accurate replica lantern made of suitable materials is better than no lantern. A lighthouse without a lantern, Piedras Blancas Light or Egmont Key Light, for example, are eligible, however they should not be considered significant for architecture or engineering under Criterion C, but could qualify as significant for transportation under Criterion A.

b. *Lens*: Ideally, the light tower should have an operational lens that was used during its period of significance. The next preference would be a non-operational lens used during its period of significance. A replacement Fresnel lens for a lens of the same order and characteristics is next in order of preference and then a Fresnel lens replacement lens of a different order or characteristic. This order of preference takes into account the historical practice of replacing lenses damaged in operation with a spare lens of the same order and characteristic from the inventory in storage. The damaged lens was then repaired and placed in storage until needed elsewhere. Also, the signal characteristics were modified as needed, to better serve the needs of the mariner.

c. *Interior*: Original access to the lantern should be intact, including original stairway, ladderways, and service room. Original interior detailing, such as molding, doors, door hardware, cabinetry also contribute to integrity.

d. *Operational Features*: Mechanisms for rotating the lens, lens pedestal, and ventilators.

e. *Attached Structures*: Towers were often built with attached work rooms, oil rooms, keeper's quarters, and fog signal buildings. It is preferable that these attached structures remain in place.

2. *Keepers' Quarters*: The presence of a keeper's quarters is preferable to a station without its keeper's quarters. A keeper's quarters that retains its configuration from the period of significance is preferable to one that does not. This also applies to assistant keeper's quarters.

3. *Sound Signal and Sound Signal Building:* Its presence, if part of the operational history, is preferable to none at all. The presence of the sound signal equipment is extremely rare and, therefore, especially significant.

4. *Oil house, generator house, fuel tanks, workshop*, which support the operation of an aid to navigation add to the completeness of a station.

5. Other subsidiary structures which add to the completeness of a station:

a. boathouse, garage/barns, pier, tramways, elevated walkways (transportation related)

b. cisterns/wells, storage buildings, privies (support keeper)

6. Architectural features, such as gargoyles, finials, architectural detailing

Assessing integrity

The National Register traditionally recognizes a property's integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association.

Location

Location is the place where the historic property was constructed or the place where the historic event took place. Integrity of location refers to whether the property has been moved or relocated since its construction. A property is considered to have integrity of location if it was moved before or during its period of significance. Relocation of a light station during its active career, if the move enhanced or continued its function, is not a significant loss of integrity. Aids to navigation relocated to serve new purposes after being decommissioned, suffer a serious loss of integrity of location, but are not automatically precluded from eligibility.

Relocation of lighthouses: Lighthouses have been moved historically in order to better serve the mariner. For example, in 1877, the 1855 Point Bonita Lighthouse was relocated from a high bluff to a rocky promontory to improve its visibility to mariners. Often lighthouses were designed to be moved, especially in areas where the shoreline was changing. When the Lighthouse Establishment approved the first Sharps Island Lighthouse, built in 1837 in Chesapeake Bay, the plans called for a small wooden keeper's house surmounted with a lantern and designed with wheels so it could be easily moved in the event that erosion threatened the structure. The lighthouse was so moved in 1848, presumably on these wheels. Later, cast-iron-plate towers were designed so they could be disassembled and re-erected as needed. This was relatively easy to accomplish as the prefabricated curved cast iron panels were bolted together. Cape Canaveral Lighthouse (1868), Florida, and Hunting Island Lighthouse (1875), South Carolina, are examples of this design; both being successfully moved.

While any historic structure is best located in its original location, it is better to have a historic structure in a non-original location than to have no historic structure at all. If a move is necessary to save the structure, every effort should be made to maintain as much of the original station integrity as possible. The lighthouse tower should normally have the same orientation to the water as it had before the move. Other station structures should be similarly moved to demonstrate the same relationship of one structure to the other. Landscaping can also be used to help restore the original impression of the station.

Several moved lighthouses have been placed in the National Register. Examples include: Drum Point Lighthouse (1883), Maryland, moved to a museum setting in 1975; Seven Foot Knoll (1855), Maryland, moved to the Inner Harbor of Baltimore in 1987; Hooper Strait Lighthouse (1879), Maryland, moved to a museum setting in 1967. Though it is more desirable for these properties to remain in their original locations; they are primarily significant for architecture and engineering rather than transportation; therefore relocation did not cause them to be delisted. Block Island (1875), Rhode Island, was moved back from a bluff in 1993; and Cape Canaveral Lighthouse (1868), Florida, was moved about one and a third mile inland in 1894 because of the threat of erosion. These properties have retained their original relationship to the water and retained their approximate historical environment and function.

Design

Design is the composition of elements that constitute the form, plan, space, structure, and style of a property. But properties change through time. Lighthouses may be raised or shortened; lanterns may be replaced; buildings may be added or removed from a light station; sound signal equipment and optics may change to reflect advancing technology. Changes made to continue the function of the light station during its career such as placement of a new lantern to accommodate a Fresnel lens may acquire significance in their own right. These changes do not necessarily constitute a loss of integrity of design. However, the removal of equipment that served as the actual light station such as a fog signal, or lens and lamp, or the removal of distinctive day markings on a tower, has a considerable impact on the property. Removal of an optic from a lighthouse, a foghorn or bell from its building, or painting over a historic lighthouse's day mark pattern, has a serious adverse effect on its design integrity.

The design integrity of light stations is also reflected by the survival of ancillary buildings and structures. The decision to nominate a light station should include an assessment of the design integrity of the property as a complex. The loss or substantial alteration of ancillary resources, such as keepers' quarters, oil houses, cisterns, and tramways, for example, may constitute a loss of design integrity.

Setting

Setting is the physical environment of a historic property that illustrates the character of the place. Integrity of setting remains when the surroundings of a light station have not been subjected to radical change. Integrity of setting of an isolated lighthouse would be compromised, for example, if it were now completely surrounded by modern development. The historic Eatons Neck Lighthouse (1799), New York, is immediately surrounded by five modern two-story dwellings built to provide housing for Coast Guard personnel at the station. The setting for this otherwise historic structure has been compromised.

Materials

Materials are the physical elements combined in a particular pattern or configuration to form the light station during a period in the past. Integrity of materials determines whether or not an authentic historic resource still exists. Materials should be replaced in kind. Many offshore light stations in the Chesapeake Bay have had their interiors inappropriately covered with plywood and/or particleboard. The roofs of many structures have been covered with asphalt shingles when slate, wood, or standing seam metal was the original roof covering. Work should meet the Secretary of the Interior's Standards which require all treatments to not only be neat and professionally done, but be reversible, that is, materials could be removed without causing harm to any historic fabric.

Workmanship

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period of history. Workmanship is important because it can furnish evidence of the technology of the craft, illustrate the aesthetic principles of a historic period, and reveal individual, local, regional, or national applications of both technological practices and aesthetic principles.

Feeling

Feeling is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time. Although it is itself intangible, feeling is dependent upon the light station's significant physical characteristics that convey its historic qualities. Integrity of feeling is enhanced by the continued use of a historic optic or sound signal at a light station. Likewise a lit tower is preferred to a non-lit tower, even if lit by a modern optic. While sounds themselves, such as the "Beeoooohhh" of a diaphone, cannot be nominated to the National Register, they enhance the integrity of feeling. The mournful call of foghorns on San Francisco Bay is an integral part of experiencing life there.

Association

Association is the direct link between property and the event or person for which the property is significant. A period appearance or setting for a historic light station is desirable; integrity of setting, location, design, workmanship, materials and feeling combine to convey integrity of association.

Reconstructions

Reconstructed light station structures are not generally eligible for the National Register because they are not authentic historic resources. In rare instances, reconstructions at a historic light station can be contributing elements of a National Register property if: 1) the reconstruction is based on scholarly analysis of graphic, written, and archeological sources; 2) the reconstruction is accurately executed, using appropriate period materials and construction techniques; or 3) the reconstruction is presented in a historically appropriate manner as an integral part of, or as part of a group of properties, such as a light station, which together constitute a historic district. Reconstructed light station structures must be part of an overall restoration plan for the entire resource.

The following examples are given to illustrate instances when reconstructions may be acceptable: The deteriorated watch room and lantern of Minots Ledge Lighthouse (1860), Massachusetts, was removed and replaced with a replica. This lighthouse is noted as America's first wave swept lighthouse and is important as one of the U.S. Lighthouse Service's top ten engineering feats. The reconstructed watchroom and lantern do not detract from the structure's integrity as the workmanship and materials match the original. The Key West Light Station (1848), Florida, has an accurate and historically appropriate replica oil house and cistern that help to restore the original historic setting of the station. Both light stations are listed on the National Register.

Criteria for determining significance[4]

Properties eligible for listing in the National Register may be districts, sites, buildings, structures, and objects. The criteria include significance of a property in American history, architecture, archeology, engineering, and culture.

The National Register nomination process uses the following criteria to determine the historic significance of sites, buildings, structures, and objects:

> A) association with *events* that have made a significant contribution to the broad pattern of our history; or
>
> B) association with the lives of *persons* significant in our past; or
>
> C) embody the *distinctive characteristics* of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D) yield, or may be likely to yield, *information* important in prehistory or history.

Criterion A

Under Criterion A, association with events that have made a significant contribution to the broad patten of history, a light station may qualify for listing in the National Register through its association with historic themes. Applicable areas of significance would include the obvious maritime history themes such as transportation, as well as several other categories such as architecture and engineering. Therefore, background information must be provided to explain the significance of the light station. Areas of significance to consider may include art, commerce, communication, engineering, entertainment/recreation, government, invention, literature, military, social/humanitarian, and transportation.

Criterion B

Under Criterion B, association with persons significant in our past, a light station will possess significance if a person's historical prominence is tied directly to the aid. These persons should have a strong tie to the property, such as keepers or politicians who lobbied for the establishment of the light station. This significance would not, for example, relate to visits to the light station by important people. National Register Bulletin 32, *Guidelines for Evaluating and Documenting Properties Associated with Significant Persons*, provides further guidance on Criterion B and its application.

Criterion C

Under Criterion C, an aid to navigation possesses significance if it embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack

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[4] Much of this section taken from James P. Delgado and Kevin J. Foster, Guidelines for Evaluating and Documenting Historic Aids to Navigation (National Register Bulletin 34, National Park Service, Interagency Resources Division, no date).

individual distinction. A light station must possess certain features to be a good representative of its type, period, or method of construction. These features vary. For example, in analyzing an early 20th century caisson lighthouse, a researcher would look for the characteristic sparkplug shape with a circular steel tower rising up from a submerged circular cylinder foundation, and boat falls mounted around the lower gallery deck. A caisson lighthouse reconfigured when automated, with the top stories of the tower replaced by a small modern beacon, might still be identifiable as a caisson lighthouse because the caisson cylinder foundation itself remains, but it is no longer a good representative of the type. Light stations are usually found to be eligible for National Register listing under Criterion C within the following categories:

Architecture: Light station may be significant if it is: 1) a good representative of a specific style of architecture, such as a Cape Cod style lighthouse; 2) a good representative of a specific type, such as a screwpile, caisson, or octagonal stone tower; or 3) a good example of the work of a master architect or builder.

Art: A light station may be significant for artistic works incorporated into the structure, such as stations with decorative sculpture reliefs or murals.

Engineering: A light station may be significant because of the engineering required for its construction, such as Minots Ledge Lighthouse or the tall skeletal tower screwpile lighthouses in the Florida Keys. Some light stations may be significant for their optics and sound signals, such as light stations that retain their clockwork mechanisms for revolving lenses or bell-strikers. Engineering achievements that are no longer extant do not impart significance in this area.

Criterion D

Under Criterion D, a light station is significant if archeological research at the site has yielded or is likely to yield information important to history. These data might include: design information, methods of construction, operation, and life at no longer extent light stations. Examples of sites that might possess significance under Criterion D include archeological remains of earlier light stations on the site or missing components of an extant light station. For example, if only the tower of a light station survives, archeological study of the foundation remains of the outbuildings, keeper's quarters, trash pits, and other structures may provide a detailed picture of the light station and life there and enhance an otherwise sketchy or largely undocumented historic record.

Archeological documentation

Archeological significance is determined by the assessment that the archeological resource, and the scientific analysis of it, will add to or revise the understanding of history. This is done by documenting the poorly recorded or undocumented aspects of a light station, such as the layout and construction of the earliest Colonial lights. The nomination should clearly demonstrate that the archeological information obtained from the site would significantly supplement or revise current historical or archeological knowledge or understanding.

When documenting the archeological features of a light station, the nomination should stress how the site is known to possess archeological remains, such as through remote sensing or archeological test excavation. The documentation of light station sites, including missing or earlier buildings and structures at existing light stations, should include descriptions and characteristics determined through archival research that are then assessed, verified, or contrasted with the actual physical, archeological

record. Archeological documentation should include a site plan showing where excavation units were placed, recorded drawings of exposed features (such as a lighthouse foundation or a deposit of material culture in a trash pit), and photographs of archeological features or significant artifacts.

Criteria considerations

Certain types of historic light stations as a general rule do not qualify for the National Register. These would include 1) aids less than 50 years of age; 2) reconstructed light station structures; 3) lighthouses moved from their original sites; and 4) collections of artifacts from light stations, including large artifacts such as lenses, fog signal equipment, and other parts of light stations removed from their setting. Some of these properties may qualify for National Register listing, however, if they meet certain exceptions.

Resources less than 50 years old: A light station achieving significance within the last 50 years can be listed in the National Register if it is of exceptional significance. To qualify, a light station must be associated with important but recent themes or developments (such as representing the first or best example of new technology, architecture, experimentation, and engineering) which scholarly or professional research has recognized as significant in the history of light station engineering, construction, or operation. Light stations potentially eligible under these circumstances would include the first Texas Tower type lighthouse, Buzzards Bay Lighthouse (1961), located in Buzzards Bay, Massachusetts; or the last tall lighthouse tower built in the United States, the 163-foot New Charleston Lighthouse (1962) on Sullivan's Island, South Carolina. This masonry tower is unusual in that it is the only triangular-shaped, aluminum-clad, elevator-accessed lighthouse in the United States. Such a light station must be compared with other light stations of its type (if any) that have similar associations and qualities to establish exceptional significance.

Levels of significance: local, state, and national

Historic contexts are found at a variety of geographical levels or scales. The geographic scale selected may relate to a pattern of historic development, a political division, or a cultural area. Regardless of the scale, the historic context establishes the framework from which decisions about the significance of related properties can be made.

Local significance

A local historic context represents the relationship of a light station to an aspect of the history of a harbor, town, city, county, cultural area, or local region. It is defined by the importance of the light station, not necessarily the physical location of the light station. For instance, if a property is of a type of light station found throughout a State, or the distribution of the light station type extends over two or more States, but its importance relates only to a particular site, harbor, relatively small body of water, cultural area, or local region, the light station would be considered of local significance.

State significance

Light stations are evaluated in a statewide context when they represent an aspect of the history of the State or territory. The light station does not necessarily have to belong to a light station type found throughout the entire State; the type may be located in only a portion of the State's present political boundary. It is the light station's historic context that must be important statewide. For example, the once numerous Chesapeake Bay cottage-type screwpile lighthouses were located only in the tidewater

portion of Maryland and Virginia, yet its historical development in the mid to late 19th century enabled shoals to be more accurately marked by building lighthouses directly in the water on the shoal instead of on nearby points of land. In effect, this lighthouse technology made passage of vessels in the tidewater areas safer and helped to increase the commerce of the entire State. These State historic contexts may have associated properties that are statewide or locally significant representations. A fifth or fourth order harbor caisson type light station in a small port town might be a locally significant representation of the caisson type, while a fifth, fourth or third order caisson light station marking a major harbor might be of State significance. Both caissons, however, are representative of the type.

A light station whose historic associations or information potential appears to extend beyond a single local area might be significant at the State level. A light station can be significant to more than one community or local area, however, without having achieved State significance. A light station type that overlaps several State boundaries can possibly be significant to the State or local history of each of the States. Such a light station type is not necessarily of national significance, however, nor is it necessarily significant to all of the States in which it is located.

National significance

Light stations are evaluated in a national context when they represent an aspect of the history of the United States and its territories as a whole. These national historic contexts may have associated light stations that are locally or statewide significant representations, as well as those of national significance.

Light stations designated as nationally significant and listed in the National Register are those properties which may potentially be designated National Historic Landmarks. The National Historic Landmark criteria are the standards for nationally significant properties; they are found in the *Code of Federal Regulations, Title 36, Part 65* and are summarized in *National Register Bulletin Number 15 Part IX: Summary of National Historic Landmarks Criteria for Evaluation.*

A light station property with national significance helps us understand the history of the nation by illustrating the nationwide impact of events or persons associated with the light station, its architectural type or style, or information potential. It must be of exceptional value in representing or illustrating an important theme in the history of the nation.

Nationally significant light station properties do not necessarily have to belong to a property type found throughout the entire country; they can be located in only a portion of the present political boundaries. It is their historic context that must be important nationwide. For example, the first Cape Henry Lighthouse served only the Chesapeake Bay and the mid Atlantic coast of the United States, yet as the nations first public works project it had a significant impact nationwide. Our elected officials realized the importance of lighthouses for aiding commerce between states and with other nations. It was the beginning of our federal program to provide safe navigation along the waterways of the United States. A pierhead light station at a small harbor might be a locally significant representation of this national context, while a set of range lights into a major harbor or river might be a statewide significant representation of the national context.

Statement of significance

The significance of a light station is based on its representation of a type, its association with significant themes in American history, and its comparison with similar light stations. The evaluation of a light station must include thorough historical research into its construction and modifications, including

changes to sites, equipment, additions, and operation. Rather than offering just a chronological discussion of a light stations career, the historical narrative included in the Statement of Significance, Section 8 of the registration form should document a light station's significance or role in social, political, economic, architectural, or technological history. This might include a discussion of the following subjects:

- development of humanitarian concern for mariners
- the protection of commerce and transportation
- the assumption of and increasing responsibility of the federal government in operating light
- stations
- American maritime trade, engineering, and commerce
- the various designs of American lighthouses, lenses, lamps, and sound signals

Specific historic contexts might involve a lighthouse's place in the development of Colonial lights in North America; the construction, organization, and operation of lights under the Fifth Auditor of the Treasury or the Lighthouse Board; or the changes wrought by the introduction of the Fresnel lens. The historical discussion should enumerate the reasons for establishing the light station, such as numerous shipwrecks or political pressure, as well as factors influencing the selection of a site and construction method, such as logistical or funding problems, and adverse natural conditions.

The significance statement should be concise and well-developed. The information in the nomination will vary according to the light stations level of significance. The development of light stations on Chesapeake Bay, for example, may be of less significance to a particular lighthouse than its place in the national development of screwpile type lighthouses.

In discussing significance, link the light station to international, national, regional, and local historic contexts, as appropriate. Convey the specific association of a light station to specific historic events. If Criterion B is applicable, a light station's association with the significant individual(s) should be discussed. Assess the light station's relation to similar properties with similar associations. Derive statements of significance from primary sources and scholarly secondary historical or professional engineering assessments. Thorough historical research is recommended in preparing National Register registration forms so that the best available information is analyzed and presented.

In the Statement of Significance, assess and justify the period during which the property achieved historic significance. The period of significance relates to the date that the current light station was built or to the dates of significant associations. The period of significance may include the date that the light station site was established if significant historic resources with integrity from that period survive. For example:

Lighthouse X, important as a good example of a screwpile light, was built in 1886 on the site of former Lighthouse A, built in 1770. An appropriate period of significance for Lighthouse X would be its date of construction or 1886, not 1770. The period of significance could include the earlier period only if archeological information obtained on the site of Lighthouse A would significantly supplement or revise current historical or archeological knowledge or understanding.

The close of the period of significance might be the deactivation, automation, or transfer of a site to new owners as these dates often reflect an important change in the historic function of the light station. If however, none of these events occurred or failed to alter the significance of the light station or if the

events occurred less than 50 years ago, then the close of the period of significance should be fifty years prior to the current year unless the light station has achieved exceptional significance within the past 50 years (refer to page 69).

Examples of light stations which obviously meet National Register criteria:

National significance

- Cape Henry (first tower) Lighthouse, Virginia, is the first lighthouse built by United States Government and the first public works project. It is significant for its role in American history. This light station qualifies under Criterion A, Commerce, Government, and Transportation; Criterion B, association with President George Washington and our first national government; and Criterion C, Architecture, John McComb, Jr.

- Thomas Point Shoals Light Station, Maryland, built in 1875, is the last largely unaltered spider foundation cottage-type screwpile lighthouse in the United States. As such, it is significant for American architecture and engineering. This light station qualifies under Criterion A, Commerce, Government, Engineering, and Transportation; and Criterion C, construction type, oldest cottage-type screwpile lighthouse in the United States remaining in its original location.

- Minots Ledge Light Station, Massachusetts, built in 1860, was the first, and most exposed waveswept lighthouse built in the United States and is considered one of the top ten engineering feats of the U.S. Lighthouse Service. It is also significant for American engineering. This light station qualifies under Criterion A, Commerce, Government, Engineering, and Transportation; and Criterion C, construction type, first wave swept lighthouse built in the United States, and engineering as one of America's greatest lighthouse engineering feats.

- Makapuu Point Light Station, Hawaii, built in 1909, houses a hyper-radiant Fresnel lens and is the landfall light for vessels coming from the West Coast to Honolulu. This light station qualifies under Criterion A, Commerce, Government, and Transportation; and Criterion C, construction type. The 1909 tower was designed to house the largest Fresnel lens ever installed in a light station in the United States. The lens is still functioning in its original setting.

- Sandy Hook Lighthouse, New Jersey, built in 1764, is oldest extant lighthouse in the United States. As such, it is a significant property in American history. This light station qualifies under Criterion A, Commerce, Government, and Transportation; and Criterion C, construction type, oldest octagonal masonry tower and oldest operational lighthouse in the United States.

State significance

- Pooles Island Light Station fog-signal building, Maryland, built in 1825, now demolished with its foundation ruins eroding from the banks of the island, was the site of one of the earliest mechanized fog signal stations in the United States. This light station qualifies under Criterion A, Commerce, Government, Invention, and Transportation; Criterion B, built by John Donahoo, a prominent lighthouse contractor in the Chesapeake Bay region; Criterion C, construction type; and Criterion D, archeology. Only the light tower is standing but the foundations of the fog signal building, one of Americas first and only stone fog building structures survives. The plans for this structure

apparently do not survive; the archeological information from this site could prove useful to documenting this rare structure.

- Jones Point Lighthouse (1856), Potomac River, Alexandria, Virginia, is a one-and-one-half-story frame structure with integral tower surmounting its roof. The light station was automated in 1919 and deactivated in 1926. This light station qualifies under Criterion A, Commerce, Government, and Transportation; and Criterion C, construction type, integral wood frame. This is the only wood frame integral type lighthouse surviving in Virginia and, as such, possesses state significance.

Local significance

- Ludington North Breakwater Lighthouse (1924), Ludington, Michigan, is a fourth order pier light marking the entrance to Ludington harbor off Lake Michigan. This light station qualifies under Criterion A, Commerce, Government, and Transportation; and Criterion C, construction type, steel square pyramidal tower. This light station possesses historic integrity and is of local significance.

- Wood End Lighthouse (1873), Massachusetts, is a square brick tower marking the entrance to Cape Cod harbor. The light station's fog signal building and keeper's quarters have been demolished. A brick oil house survives. This light station qualifies under Criterion A, Commerce, Government, and Transportation; and Criterion C, construction type, harbor brick tower. This light station has lost much of its historic integrity due to demolition of associated light station structures but possesses local significance.

As illustrated above, those light stations which qualify for listing in the National Register will usually qualify because of their significant contribution to the broad pattern of American history, embody a distinctive characteristic of a type, period, or construction method, and/or that represent the work of a master. As such, nearly any lighthouse 50 years or older possessing site and historic integrity may qualify for listing at least on the local level. Thus, the following justifications may be used for most lighthouses: "Lighthouse X is significant for its association with federal governmental efforts to provide an integrated system of navigational aids and to provide for safe maritime transportation (specify region such as Chesapeake Bay, west coast, etc.) (Criterion A). Lighthouse X embodies a distinctive design and method of construction that was typical of (specify specific construction type such as screwpile, caisson, etc.) lighthouse construction on the (specify specific geographic region in which this construction method exemplifies such as Carolina sounds, Chesapeake and Delaware bays, etc.) during the (specify the time span when this construction method was used such as last quarter of the nineteenth century and first quarter of the twentieth century, etc.) (Criteria C)."

Examples of light stations that may not meet National Register criteria:

- Lime Point Fog Station, California, built in 1883 and outfitted with a post light in 1900, is significant as a working fog signal station and one of five light stations which served the entrance to San Francisco Bay. However, this station does not qualify for listing on the National Register due to lack of historic integrity of site. The Lime Point Fog Signal Station consisted of a fog signal building (1883), keeper's quarters (1883), boiler shed (1883), coal house (1883), wood shed (1883), various water tanks (1883, 1889, 1897, 1907), various fuel tanks (1094, 1907), oil house (1900), and storehouse (1907). About 1910, a rectangular concrete addition was added to the northwest corner of the fog signal station for the mounting of a search light by the U.S. Army. All of these structures have been demolished except for the fog signal building and search light addition. The integrity of the site and sole existing structure has been compromised beyond acceptable tolerance. Furthermore,

while the foundations for the demolished structures survive, they provide little additional information to that which is already documented in plans, photographs and plats of the station that are preserved in the National Archives.

- Mile Rocks Lighthouse, California, built in 1906 near the entrance to San Francisco Harbor, was considered one of the great American engineering feats due to unusually strong currents and the open waveswept nature of the site. However, the lighthouse was automated, the upper two tiers of the tower removed, and a helicopter landing pad erected on top. The historic integrity of this otherwise important structure has been compromised beyond acceptable standards. The light station could qualify for listing on the National Register as an example of a caisson light station and for its engineering feat, but it is, nevertheless, a poor example of a lighthouse due to lack of integrity.

Subjectivity versus objectivity

Over time the interpretation of the National Register eligibility criteria for lighthouses has varied. For example, Piedras Blancas Lighthouse (1879), California, is listed on the National Register despite its lantern being removed in 1949 because of storm damage. It could be argued that the architecture of this broad tower, with its rounded pedimented windows and arched pedimented door, make the tower unique enough to warrant listing despite lacking one of its significant features, the lantern room. Furthermore, the historic keeper's quarters have all been demolished and replaced with ranch-style 1960s living quarters. The shell of the fog signal structure built in 1906 is extant and presently used for storage; all of the fog signal equipment has been removed. On the ground level interior of the light tower is a unique and an unusually large built-in wooden storage cabinet. The space of this unusually broad tower base was used as a workroom area, unusual for lighthouse towers. While this station retains some unique features, in general, the historic integrity of the site has been compromised and, therefore, it makes listing it in the National Register questionable.

This somewhat subjective process has resulted in some resources being listed that are questionable, while other resources that should be listed have not been listed. It is for this reason that the nomination form has specific check offs in Section 8 "Statement of Significance." The nominator must check all "applicable" criteria, as well as provide "areas of significance," "period of significance," "significant dates," "significant persons," "cultural affiliation," and "architect/builder," as well as a narrative describing the significance of the nomination. The nomination then goes to the State Historic Preservation Officer in the state within which the resource is located, who makes a recommendation with final authority resting with the Keeper of the Register.

What does listing on the National Register mean?

For any federal agency, it means the lighthouse and any other associated structures so listed such as keeper's quarters, fog signal building, oil house, etc., cannot be altered, neglected, or demolished without going through Section 106 review as required by the National Historic Preservation Act.

The National Historic Preservation Act (NHPA) requires a federal agency head with jurisdiction over a federal, federally assisted, or federally licensed undertaking, to take into account the effects of the agency's undertakings on *all* properties included in or eligible for the National Register of Historic Places and, prior to approval of an undertaking, to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the undertaking.

G. Geographical Data

Any state along the coasts and Great Lakes that contain light stations -- Alabama, Alaska, California, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Texas, U.S. Virgin Islands, Vermont, Virginia, Washington, and Wisconsin.

H. Summary of Identification and Evaluation Method

The U.S. Coast Guard is currently evaluating light stations under their jurisdiction that have not been previously evaluated for the National Register as part of their cultural resource management responsibilities under Section 106 and Section 110 of the National Historic Preservation Act of 1966, as amended. In 1997, the Coast Guard contracted with the National Park Services National Maritime Initiative to complete a multiple property documentation form as a vehicle for evaluating these properties for listing in the National Register. The Initiative gained considerable knowledge of lighthouses around the United States after conducting a national comprehensive survey, which was published in 1994. The Initiative has also evaluated light stations through preparation of several National Historic Landmark nominations for light stations and other maritime properties.

The historical contexts for this nomination were derived from two comprehensive draft studies on lighthouses. The first, completed by lighthouse historian Ross Holland in 1993, focused primarily on the administrative history of the lighthouse service. The second, completed by lighthouse consultant, Ralph Eshelman in 1997, developed a typology of lighthouse construction types. Registration requirements were developed using National Register criteria. Assessments of integrity are based on a hierarchy of structures and features composing a light station. Assistance, review, and comments were provided by Wayne Wheeler, president, U.S. Lighthouse Society; Beth Savage, architectural historian, National Register of Historic Places; and Kevin Foster, Chief, National Maritime Initiative.

Site visits were initially made to light stations owned by the U.S. Coast Guard in Maine and Virginia that had not previously been evaluated for listing in the National Register of Historic Places. Site visits, Ralph Eshelman conducted additional archival research, and initial preparation of the forms through a cooperative agreement with the U.S. Lighthouse Society. Also in the first submission, nominations for Maryland lighthouses under Coast Guard jurisdiction that were initially prepared by Ralph Eshelman for the Maryland Historical Trust have been reformatted and appended. As funding becomes available, more individual property nominations in other states will be prepared and appended to this study. Non-U.S. Coast Guard owners of light stations may also use this multiple property nomination as a vehicle for listing their properties in the National Register.

I. Major Bibliographical References

Adamson, Hans Christian, *Keepers of the Lights* (New York, Greenberg Publisher, 1955)

Bachand, Robert G., *Northeast Lights: Lighthouses and Lightships Rhode Island to Cape May, New Jersey* (Norwalk, Connecticut: Sea Sports Publications, 1989)

Baker, T. Lindsay, *Lighthouses of Texas* (College Station: Texas A&M University Press, 1991)

Bishop, Eleanor C., *Prints in the Sand: The U.S. Coast Guard Beach Patrol During World War II* (Missoula, Montana: Pictorial Histories Publishing Co., 1989)

Cipra, David L., *Lighthouses, Lightships, and the Gulf of Mexico* (Alexandria, Virginia: Cypress Communications, 1997)

Clifford, Candace, *1994 Inventory of Historic Light Stations* (Washington, D.C.: Government Printing Office for the National Park Service, 1994)

de Gast, Robert, *The Lighthouses of the Chesapeake* (Baltimore and London: The Johns Hopkins University Press, 1973)

Dean, Love, *Lighthouses of the Florida Keys* (Key West, Florida: Historic Florida Keys Foundation, Inc., 1992)

_____, *The Lighthouses of Hawaii* (Honolulu: University of Hawaii Press, ca. 1991)

Eshelman, Ralph, *History of Drum Point Lighthouse* (Solomons, Maryland: Calvert Marine Museum, 1978)

Gary, Ralph D., *The National Waterway: A History of the Chesapeake and Delaware Canal, 1769-1965* (University of Illinois Press, 1967)

Gleason, Sarah C., *Kindly Lights: A History of the Lighthouses of Southern New England* (Boston: Beacon Press, ca. 1991)

Gowdy, Jim, *Guiding Lights of the Delaware River and Bay* (Mizpah, N.J.: privately printed, 1990)

Hague, Douglas B. , and Rosemary Christie, *Lighthouses: Their Architecture, History and Archeology* (Wales: Gomer Press, 1975)

Holland, Ross, *America's Lighthouses: Their Illustrated History Since 1776* (Brattleboro, Vermont: Stephen Greene Press, 1972)

_____, *Maryland Lighthouses of the Chesapeake Bay* (Crownsville, Maryland: Maryland Historical Trust, 1997)

Hyde, Charles, *The Northern Lights: Lighthouses of the Upper Great Lakes* (Detroit: Wayne State University Press, reprint 1995)

Johnson, Arnold Burges, *The Modern Light-house Service* (Washington, D.C.: Government Printing Office, 1890)

Keepers Log, quarterly journal of the U.S. Lighthouse Society, various articles

Lighthouse Digest, monthly publication, various articles

McCarthy, Kevin M., *Florida's Lighthouses* (Gainesville University Press, ca. 1990)

Naish, John, *Seamarks: Their History and Development* (London: Stanford Maritime, 1985)

Putnam, George, *Lighthouses and Lightships of the United States* (Boston and New York: Houghton Mifflin Co., 1917)

_____, *Sentinel of the Coasts: The Log of a Lighthouse Engineer* (New York: W.W. Norton & Co., 1937)

Scheina, Robert, The Evolution of the Lighthouse Tower, in Lighthouses: Then and Now, a supplement to the *Commandants Bulletin* (ca. 1988)

Shubert, Frank N., *The Nation Builders: A Sesquicentennial History of the Corps of Topographical Engineers 1838-1863* (Fort Belvoir, Virginia: Office of History, U.S. Army Corps of Engineers, 1988)

Stick, David, *North Carolina Lighthouses* (Raleigh, North Carolina: North Carolina Department of Cultural Resources, Division of Archives and History, 1988)

U.S. Coast Guard, *Light Lists* (Washington, D.C.: Government Printing Office, 1933, 1943, 1946,)

U.S. Lighthouse Board, *Annual Reports* (Washington, D.C.: Government Printing Office, 1873, 1892, 1894)

U.S. Lighthouse Board, *Instructions to Light-Keepers and Masters of Light-House Vessels, 1902* (Washington, D.C.: Government Printing Office, 1902)

U.S. Lighthouse Service, *Annual Reports* (Washington, D.C.: Government Printing Office, 1915)

Weiss, George, *The Lighthouse Service: Its History, Activities and Organization* (Baltimore, Maryland: The John Hopkins Press, 1926)

Unpublished Manuscripts

Clemensen, A. Berle, et. al., *Historic Structure Report: Three Sisters Lighthouse, Cape Cod National Seashore, Massachusetts* (National Park Service, 1986)

Eshelman, Ralph, Draft: American Lighthouse Construction Types (National Maritime Initiative, National Park Service, 1995)

Gredell and Associates: Structural Engineers, Chesapeake Bay Lighthouses, (Wilmington, Delaware, 1991)

Holland, Ross, Draft National Historic Landmark (NHL) Context Study on Lighthouses (National Maritime Initiative, National Park Service, 1993)