

PORT OPERATING PLAN
FOR
HAMPTON ROADS, VIRGINIA

1. LAMBERTS POINT TERMINAL
2. MARITIME NORFOLK TERMINAL

PREPARED BY

PORT OPERATIONS TEAM

FIRST ATOMIC SHIP TRANSPORT INC.

39 BROADWAY, NEW YORK, N. Y. 10006

APPROVED BY R. P. DENISE

VICE PRESIDENT FOR OPERATIONS

N.S. SAVANNAH
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REVISED JUNE, 1994
BY
U.S. DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

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REFERENCES

- a. Atomic Energy Commission approval letter dated October 5, 1965 for FAST-111, Port Operating Plan for Port of Hampton Roads, Virginia
- b. Nuclear Regulatory Commission approval letter dated July 17, 1975 for MASTS-103, Port Operating Plan for Baltimore, Maryland

1. INTRODUCTION

The N.S. SAVANNAH will be towed to the James River Reserve Fleet (JRRF) located at Fort Eustis, Virginia above Hampton Roads for lay up in the Reserve Fleet in a defueled condition. Prior to arrival at the JRRF the ship will be drydocked for hull repairs and maintenance at the BethShip Sparrows Point Shipyard, Baltimore, Maryland (Please refer to previously submitted revised Port Operating Plan for Port of Baltimore, Maryland, dated May 1994). Due to the immediate unavailability of the drydock at BethShip, SAVANNAH will be temporarily berthed at an interim, MARAD controlled layberth at the Moon Engineering Company (MECO), in Portsmouth, Virginia. This layberth is located within the Port of Hampton Roads area.

This report updates the AEC approved (October 5, 1965) "Port Operating Plan for Port of Hampton Roads, Virginia" (FAST-111). It has been prepared on the basis of the N.S. SAVANNAH in a fuel-removed condition, consistent with the previously approved "Port Entry and Berthing Plan for Savannah, Georgia" (MASTS-102), as referenced in a July 17, 1975 NRC approval letter for the revised MASTS-103 Port Operating Plan for Baltimore, Maryland. The report summarizes pertinent information regarding approach and navigation, port administration, site evaluation, and emergency plans.

2. GENERAL CONSIDERATIONS

The following information describes the berth characteristics and the administrative, operational, and emergency information considered necessary to provide systematic safekeeping from industrial hazards and protection of the public from radioactive materials aboard the ship while in transit and berthed at Moon Engineering Company.

2.1 LOCATION AND GENERAL DESCRIPTION OF PORT

The two Hampton Roads ports of Newport News and Norfolk (the latter includes Norfolk, Portsmouth and South Norfolk) export more tonnage than any other Atlantic Coast port. Located midway on the Eastern Seaboard, Hampton Roads is 18 miles from the open sea. The 1965 population of Newport News and Norfolk was recorded as 225,000 and 803,000 respectively.

In general, the Tidewater area encompasses numerous flat peninsulas, wide estuaries and many swamps. Topography farther inland rises in an irregular pattern of progressively higher northeast-southwest mountain ranges to the main Appalachian Mountains. Although some distance from the ocean, this mountain barrier exerts an important influence on the winter climatic pattern in the coastal area; it partly blocks the cold continental air from the interior, and this combines with the moderating effect of the ocean to produce a more equable climate than is found in continental latitudes elsewhere.

Prevailing winds are from the northwest during the cooler months, October through March, and from the southwest during May through September. The average wind speeds during warmer months are generally lower than during the colder seasons. The highest average speeds occur in March and lowest in August.

Temperatures in this area are generally moderate with a recorded mean average temperature of 59.2 degrees (F) in Norfolk, Va. Precipitation over the coastal sections is moderately heavy and well distributed. Normal monthly totals vary from 2 or 3 inches in October to 4 or 6 inches in July with an annual total of 40-45 inches.

Although visibility is generally good along the coastal areas, it can be hampered by smoke, haze, fog and precipitation. The number

of days with visibilities less than 500 yards is recorded as between 14 - 44 annually. Advection sea fog occasionally drifts on shore in the warmer months, burning off from the surface and usually lifting by afternoon. The mean range of tide in the Bay runs about 2.8 feet with a current velocity of about 1.2 knots.

It is concluded that there are no unusual characteristics of the Port of Hampton Roads / Portsmouth area which would make it unsuitable for the temporary layberthing of the N.S. SAVANNAH in the defueled condition.

2.2 PORT ADMINISTRATION AND SERVICES

The Port of Hampton Roads, including the ports of Norfolk, Portsmouth and Newport News, is governed by the Virginia Port Authority (VPA), a commonwealth (state) agency reporting to the Secretary of Commerce and Trade. VPA owns and operates four public terminals within the port.

Virginia Port Authority
600 World Trade Center
Norfolk, Virginia 23510
(804) 683-8000

2.2.1 U.S. Coast Guard

Contact with the USCG will be made prior to reaching the entrance to Chesapeake Bay off Cape Henry (Fig. 1), and notice of arrival and proposed passage details will be furnished at that time. Normally, initial contact will be on HF radio frequency 2182 KHz and further communications will be on HF 2670 KHz or VHF radio telephone frequency 156.8 MHz (Channel 16) and/or 157.1 MHz (Channel 22A).

USCG District 5

Marine Safety Office - Hampton Roads, Virginia

Captain of the Port: (804) 441-3302

Port Operations: (804) 398-6231

24 Hour Telephone: (804) 441-3314

The Coast Guard maintains one harbor tug, one 110' and two 82' patrol boats and several 20'-40' utility boats in the Port of Hampton Roads.

2.2.2 Tug Service

The contracted towing company will be responsible for compliance with towing regulations and requirements applicable to the transit route and for providing required assisting tugs during transit to, and docking at, the Moon Engineering Co. (MECO) layberth:

2.2.3 Pilot Service

Pilot service for transit from Cape Henry to the MECO layberth will be arranged for by the contracted towing company, as required.

2.2.4 Security

While at the MECO layberth the contractor (shipyard) will have responsibility for the security of the N.S. SAVANNAH. In addition to the 24 hour security guard posted at the entrance to the facility, a guard will be posted at the entrance to the ship. Periodic rounds of the ship and a daily check of locks and seals on controlled access spaces will be performed by shipyard security personnel. The MECO location affords some measure of security with its surrounding secured railyards and container terminal, and water-only access.

In addition to the above, the following security provisions will be

taken: (1) Intrusion alarms (siren and rotating light) will be installed on the ship; (2) Heavy duty security locks will be installed on radiation control areas; (3) Only one outside entrance to public spaces will be useable and will be equipped with an intrusion alarm. All other entrances will be locked or sealed from the inside.

2.2.5 Fire Protection

While at the layberth, a minimum of combustible materials will be aboard the N.S. SAVANNAH. Therefore, fire and explosion are not considered to be significant hazards.

Initial response to a fire will be provided by MECO employees. If needed, local fire equipment from the city of Portsmouth will respond if deemed necessary by the authorities on scene.

2.2.6 Telephone Service

Telephone service will not be installed on the N.S. SAVANNAH while at the layberth. The nearest telephone will be ashore in the MECO Administrative offices.

3. TRANSIT OPERATIONS

The N.S. SAVANNAH will enter Hampton Roads under tow from the Atlantic Ocean via the Lower Chesapeake Bay and Thimble Shoal Channel and will proceed to the Moon Engineering Company via Entrance Reach through the Hampton Roads bridge-tunnel, Norfolk Harbor Reach, Craney Island Reach, Port Norfolk Reach over the Midtown Tunnel (U.S. Route 58), and into the MECO facility at Pinnars Point.

3.1 TRANSIT ROUTE

The 11 mile approach from seaward is deep and unobstructed with a controlling depth of 40 feet. The main channel width of 1,000 feet is supplemented on each side by an auxiliary channel of 450 feet width with a minimum controlling depth of 32 feet.

At the western end of the Thimble Shoal Channel the vessel will pass through north of Willoughby Bank and enter the Hampton Roads area between Fort Wool (on Willoughby Spit) and Old Point Comfort. Thence it will enter the Entrance Reach section of the channel.

There are two Naval anchorages and one general anchorage adjacent to the south of Thimble Shoal Channel off the Lynnhaven Roads area. These anchorages are well removed from the traffic channel.

Entrance Reach extends in a Northeast-Southwest direction for a distance of about 1.4 miles and is 1500 feet wide with a controlling depth of 40 feet.

Entrance Reach forms a junction with the Newport News channel and Norfolk Harbor Reach about 0.65 miles northwest of Sewells Point (Figure 2). From seaward to this point, the entering and departing conditions are identical for vessels bound for or from Norfolk or Newport News.

From Entrance Reach, transit will continue through Norfolk Harbor Reach for a distance of 3.8 miles (Figures 2,3). Norfolk Harbor Reach extends North-South and is a minimum of 1000 feet wide with a controlling depth of 45 feet. The eastern side of this channel bounds the Sewells Point section of Norfolk Harbor at a minimum distance of about 1500 feet. This includes the Naval Base and Norfolk International Terminal as well as a number of other commercial establishments. The land area adjacent to the eastern side of the Norfolk Harbor Reach is primarily industrial in nature

for a distance of about 3/4 of a mile inland from the shoreline.

The overall channel width reduces to 750 feet at the entrance to the Craney Island Reach (Fig. 3), however, the controlling depth remains at 50 feet for the 2.1. mile length of the channel (Fig. 4). The distance to the nearest shoreline also reduces to about 750 feet at a point on the northeast corner of Craney Island. Craney Island is a low and flat section of the mainland that houses a naval fuel depot and its associated piers. There is no resident population within one mile of the island shoreline.

At the Southern end of Craney Island Reach there is a junction known as Lambert Bend and this is the entrance to the channel area known as Port Norfolk Reach (Fig. 5). This reach remains at a width of 750 feet and has a controlling depth of 40 feet.

The vessel will proceed about 1.2 miles down the Port of Norfolk Reach until it is abeam of the MECO facility where it will turn in the channel and be escorted to the selected berth.

3.2 TRANSIT SUMMARY

During the transit from Chesapeake Bay entrance to the MECO layberth, there are no population exposure restrictions since in the absence of nuclear fuel there is no fission product inventory.

Assisting tugs, if needed, will be in attendance from Chesapeake Bay Entrance to the MECO layberth and compliance with towing regulations enroute will be the responsibility of the contracted towing company.

The sequence of arrival events of the N.S. SAVANNAH at the entrance to Chesapeake Bay are as follows:

- a. Contact pilot boat and assisting tugs before arrival at Cape

- Henry and give estimated time of arrival.
- b. Board pilot and meet tugs, if needed, off Cape Henry. Establish radio contact with USCG. Normally, initial contact is on 2182 KHz, and 2670 KHz is used for further communication.
 - c. Proceed to layberth.
 - d. Secure ship at layberth at Moon Engineering Co.

4. BERTH

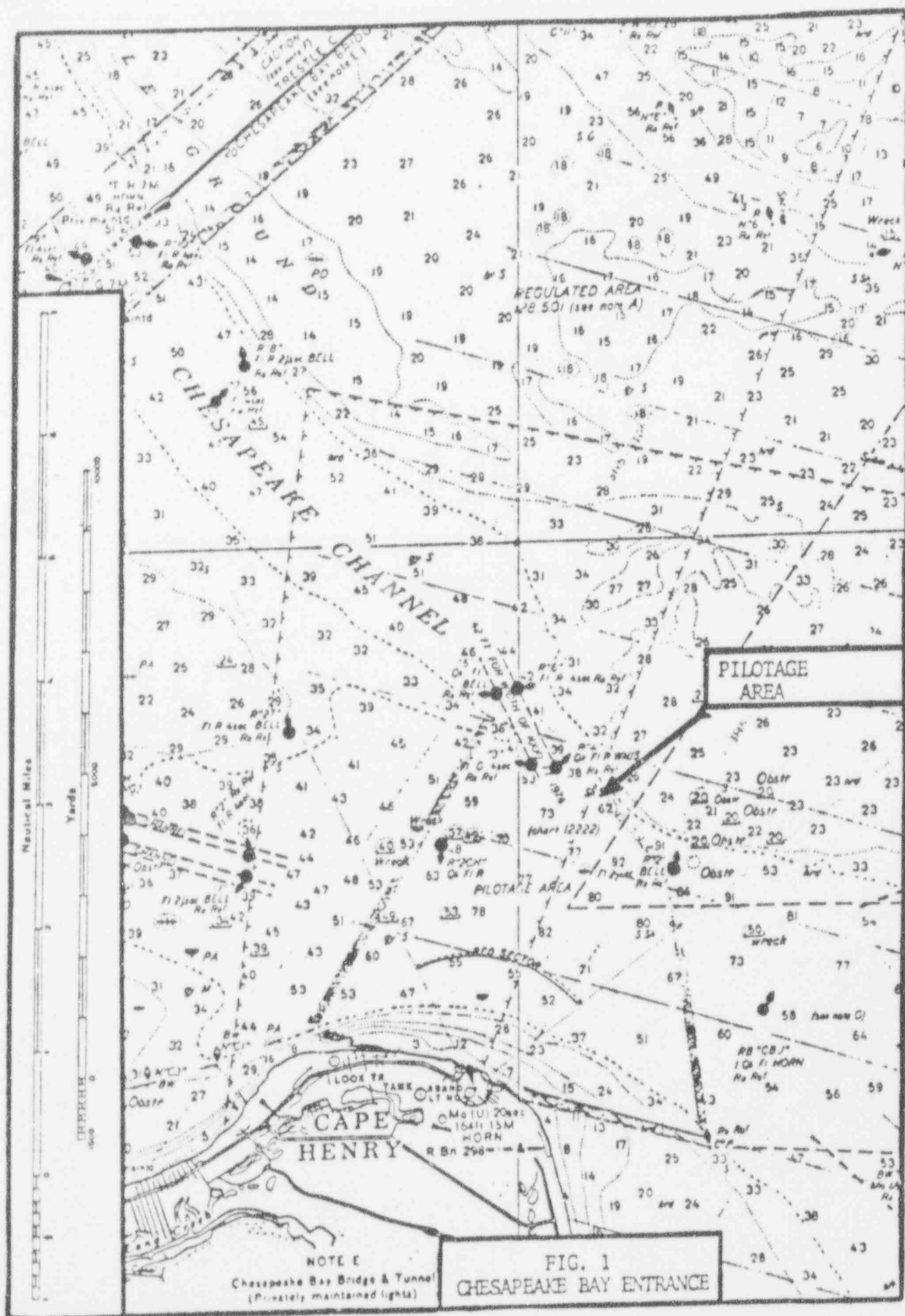
The location of the Moon Engineering Company and the proposed N.S. SAVANNAH layberth is shown in Figures 5 and 6. The layberth is under previous, exclusive contract to MARAD for the outporting of up to 3 Ready Reserve Force (RRF) vessels. These vessels are currently undergoing overhaul and upgrade at a different facility, therefore, the layberth is available for use as an interim berth for N.S. SAVANNAH until drydocking at BethShip Sparrows Point.

Moon Engineering Company is located adjacent to the Port Norfolk Reach of the Elizabeth River, in the Pinnars Point section of Portsmouth, Virginia (fig. 5). The sight is controlled by fence, guarded 24 hours, and is bounded by railyards and a SeaLand Services container terminal. Further description of the facility is shown on Figure 7.

5. EMERGENCY PLANS

5.1 EMERGENCY FIRE PLAN

In the event of a fire aboard the N.S. SAVANNAH while moored at the MECO layberth, shipyard personnel will fight the fire with equipment at hand. If required, assistance from local fire departments will be requested.



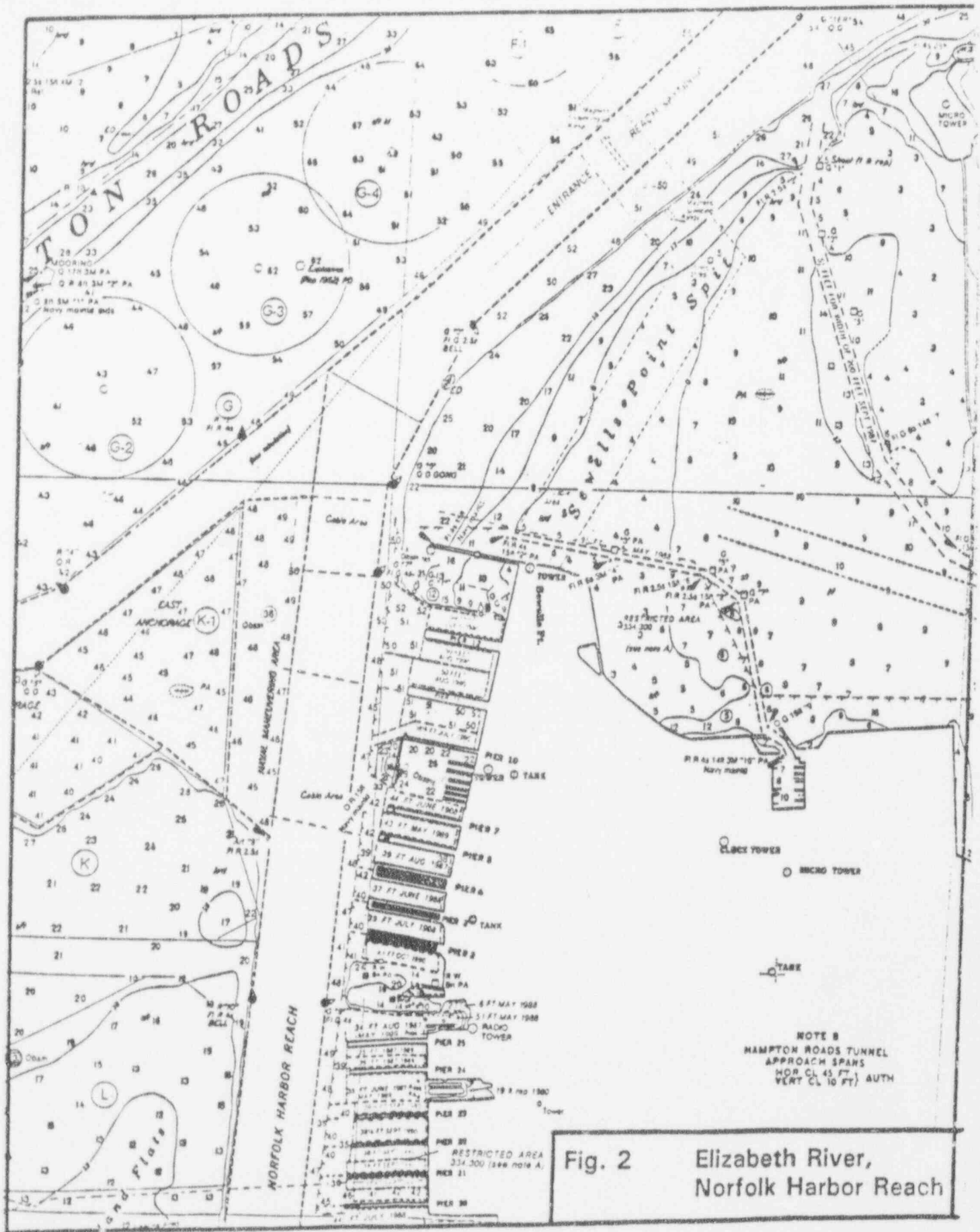


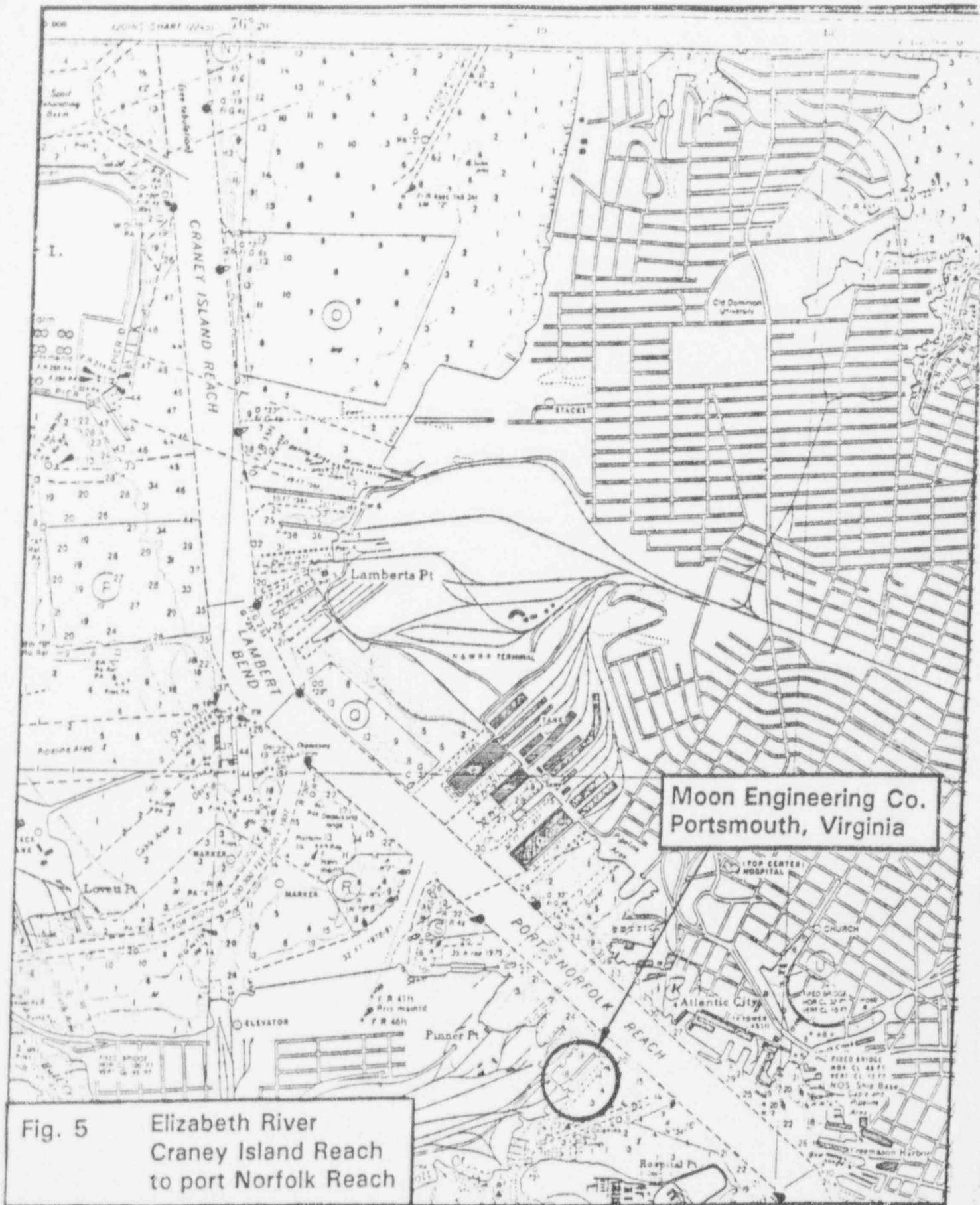
Fig. 2 Elizabeth River, Norfolk Harbor Reach





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 U.S. DEPARTMENT OF COMMERCE
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE
 COAST AND GEODETIC SURVEY

Fig. 4 Elizabeth River,
 Craney Island Reach



Moon Engineering Co.
Portsmouth, Virginia

Fig. 5 Elizabeth River
Craney Island Reach
to port Norfolk Reach

FACILITY LAYOUT

Moon Engineering Co.

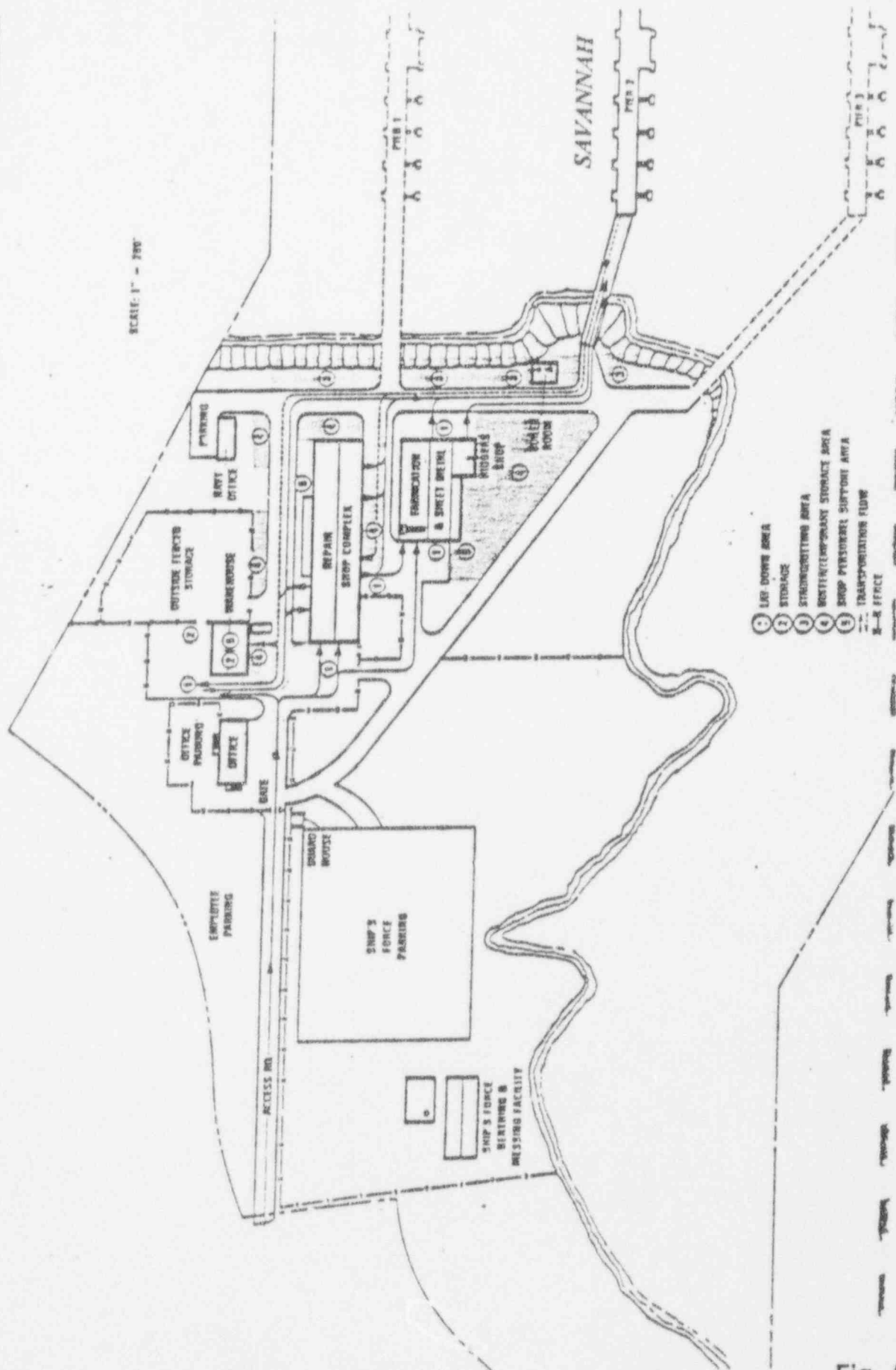


Fig. 6

shipbuilding and ship repairing

seventeen acres include a comprehensive shop complex and berths for six ships at modern pier facilities.

MOON ENGINEERING CO., INC.

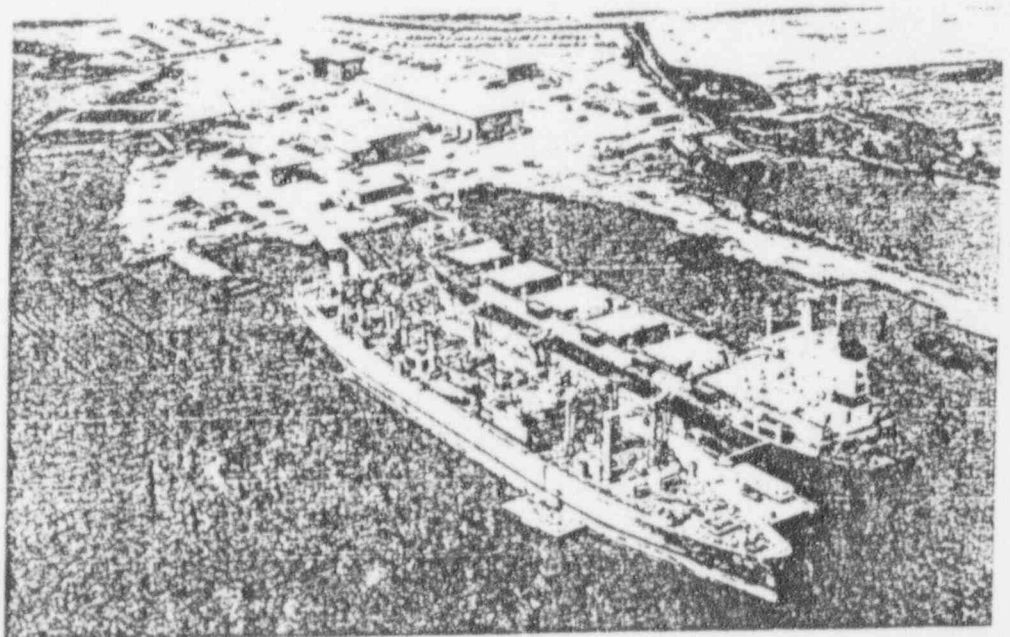
Moon Engineering Co., Inc. has relocated its repair facility to the Pinners Point section of Portsmouth, Virginia. The Norfolk site is still available and used primarily for rental wharfage.

Established in 1920, Moon Engineering in Norfolk had grown to a fully capable marine and industrial repair yard concentrating on "down river" work with a limited "in yard" capacity restricted by its wharfage space and draft.

The new, highly efficient site is comprised of approximately 70 acres, 25 of which are high land with nearly 5,000 feet of water frontage and deep-water wharfage. The yard became operational in October 1985 with one fully serviced 750-foot concrete pier with 35 feet of water. Approximately 40,000 square feet of manufacturing space is available to include machine, electrical, welding and steel fabrication, sheet metal, diesel, hydraulic, rigging, and valve repair shops.

The Moon Engineering work force, made up of its qualified management team and highly experienced and skilled labor force of nearly 325 personnel, facilitates the capability of basically all facets of ship and industrial repair. Although the business is comprised primarily of Navy and government contracts, commercial ship repair and industrial plant repair, such as machinery and boiler repair, constitute a significant percentage of work.

Future expansion, made possible by the excess land and deepwater availability, is anticipated to include two more deep water piers and expanded manufacturing space.



Moon Engineering Plant

REFERENCES



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

October 5, 1965

IN REPLY REFER TO

Docket No. 50-238

Port Review No. 10
Revision 1

First Atomic Ship Transport, Inc.
39 Broadway
New York, New York 10006

Attention: Mr. John E. Bone
Executive Vice President

Gentlemen:

This is in reference to your letter dated October 2, 1965, requesting an amendment to the Port Operating Plan for the Port of Hampton Roads, Virginia, described in FAST-111, to provide for alternate berths for the N. S. Savannah at the United States Naval Base near Sewells Point in addition to those previously considered at the Lamberts Point Terminal and Maritime Norfolk Terminal in our Port Review No. 10. All other aspects of the operation of the N. S. Savannah in and around the port of Hampton Roads would be the same as those described in FAST-111.

The information contained in your letter indicates that the distances to the boundaries of the controlled and low population zones for the U. S. Naval Base berths are substantially similar to the berths previously considered at the Lamberts Point Terminal and the Maritime Norfolk Terminal and although there are approximately 5,000 persons employed within the low population zone radii at the U. S. Naval Base berths, these persons are readily evacuable since they are subject to control by the base security forces.

Based on our review of the information provided in FAST-111 as amended by your letter of October 2, 1965, we have concluded that the N. S. Savannah can be operated in and near the Port of Hampton Roads, Virginia, using the proposed berths at the United States Naval Base, without undue risk to the health and safety of the public, provided that adequate tugs are maintained in attendance or on call in accordance with the time-to-melt criterion while the ship is berthed or unless the reactor is shut down and depressurized.

FAST, Inc.

- 2 -

Accordingly, Port Review No. 10, Revision No. 1, is hereby issued to supplement Port Review No. 10, issued August 20, 1965. If modifications to the Port Operating Plan for Hampton Roads, Virginia, as approved herein, are contemplated for subsequent re-entry to the port of Hampton Roads, a new port operating plan should be submitted for review.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "R. L. Doan".

R. L. Doan, Director
Division of Reactor Licensing

100

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20545

JUL 17 1975

Docket No. 50-238

Port Review No. 66

Maritime Administration
ATTN: Mr. D. L. Crook, Director
N. S. Savannah Program
Post Office Box 1600
Galveston, TEXAS 77550

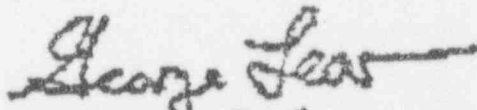
Gentlemen:

The United States Department of Commerce, Maritime Administration, by letter dated July 11, 1975 has requested review and approval of its revised Port Operating Plan for Baltimore, Maryland (designated MASTS-103). This request has been considered pursuant to the Technical Specification of Facility License No. NS-1 for the N. S. Savannah.

On the basis of our previous review and approval of MASTS-103 "Port Entry and Berthing Plan for Savannah, Georgia" and the consistency of MASTS-103 with that document, we have concluded that the N. S. Savannah can be operated as proposed in and near Baltimore, Maryland, without undue risk to the health and safety of the public.

Accordingly, Port Review No. 66, is hereby issued. If modifications to the Port Operating Plan for Baltimore, Maryland, as approved herein, are contemplated for subsequent reentry to the port of Baltimore, a new port operating plan should be submitted for review.

Sincerely,



George Lear, Chief
Operating Reactors Branch #3
Division of Reactor Licensing

