

Check Sheet

Company Name: Kennedy Space Center
Permit Number: HA 09-121621, F-6391-640, -2378
PSD Number: _____
Permit Engineer: _____

Application:

- Initial Application
- Incompleteness Letters
- Responses
- Waiver of Department Action
- Department Response
- Other

Cross References:

-
-
-

Intent:

- Intent to Issue
- Notice of Intent to Issue
- Technical Evaluation
- BACT Determination
- Unsigned Permit
- Correspondence with:
 - EPA
 - Park Services
 - Other
- Proof of Publication
 - Petitions - (Related to extensions, hearings, etc.)
 - Waiver of Department Action
 - Other

Final Determination:

- Final Determination
- Signed Permit
- BACT Determination
- Other

Post Permit Correspondence:

- Extensions/Amendments/Modifications
- Other

P 408 531 214
 RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
 NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. James D. Phillips	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date 3/5/87	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983 447-945

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. Show to whom, date and address of delivery.

2. Restricted Delivery.

3. Article Addressed to:
 Mr. James D. Phillips
 NASA, DF-EMS
 Kennedy Space Center, FL 32899

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured	214
<input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD	P 408 531 124
<input type="checkbox"/> Express Mail	

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X

6. Signature - Agent
X *J. Willis*

7. Date of Delivery
3-9-87

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Mr. James D. Phillips
Director of Engineering Development
NASA, DF-EMS
Kennedy Space Center, Florida 32899

February 27, 1987

Enclosed are Permit Numbers AC 05-121640, AC 05-121641, AC 05-121639, and AC 05-122378 to National Aeronautics and Space Administration, Kennedy Space Center which authorize the construction of two 1.88 MMBtu/hr hot water generators, one 2.1 MMBtu/hr steam generator, and one 1.25 MMBtu/hr hot water generator at the Cape Canaveral Air Force Station in Brevard County, Florida. These permits are issued pursuant to Section 403, Florida Statutes.

Any Party to these permits has the right to seek judicial review of the permits pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date these permits are filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

for *C. H. Fancy P.E.*
C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Tom Sawicki

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on March 5, 1987 to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Patricia G. Adams
Clerk

March 5, 1987
Date

Final Determination

National Aeronautics and Space Administration
Kennedy Space Center

State Permit Nos.

AC 05-121640	1.88 MMBtu/hr, Hot Water Generator #1
AC 05-121641	1.88 MMBtu/hr, Hot Water Generator #2
AC 05-121639	2.10 MMBtu/hr, Steam Generator
AC 05 122378	1.25 MMBtu/hr, Hot Water Generator

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

February 24, 1987

Final Determination

NASA's applications for permits to construct two 1.88 MMBtu/hr hot water generators, one 2.1 MMBtu/hr steam generator, and one 1.25 MMBtu/hr hot water generator at the Cape Canaveral Air Force Station in Brevard County, Florida, have been reviewed by the Bureau of Air Quality Management.

Public Notice of the Department's Intent to Issue the construction permits was published in the Florida Today newspaper on September 18, 1986.

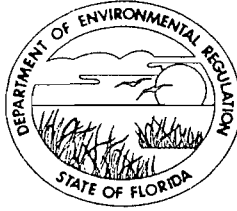
Copies of the preliminary determination have been available for public inspection at the Department's District office in Orlando and the Bureau of Air Quality Management office in Tallahassee.

No comments were received as a result of the public notice period.

The final action of the Department will be to issue the permits as noticed during the public notice period.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

PERMITTEE:
National Aeronautics and Space
Administration - NASA
KSC - Headquarters Bldg.
Kennedy Space Center, FL 32899

Permit Number: AC 05-121639
Expiration Date: September 30, 1987
County: Brevard
Latitude/Longitude: 28° 29' 33" N
80° 34' 54" W
Project: 2.1 MMBtu/hr Steam
Generator

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 2.1 MMBtu/hr steam generator located at the Hangar L, Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center in Brevard County, Florida.

Construction shall be in accordance with the attached permit application except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 18, 1986.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Except as required pursuant to these specific conditions, the proposed hot water generator construction shall be carried out in accordance with the statements in the application.
2. The sulfur content of the No. 2 fuel oil to be burned in the proposed generator shall not exceed 0.5 percent by weight, as determined by ASTM Method D-1552. The fuel analysis reports of the oil used shall be recorded and these records shall be kept for a minimum of two years for regulatory agency inspection.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: September 30, 1987

SPECIFIC CONDITIONS:

3. The visible emissions from the proposed generator shall not exceed 20 percent opacity, six (6) minute average. DER Method 9 (17-2.700(6)(a)9, FAC) shall be used for the performance test conducted by the permittee.
4. The test of visible emissions shall be accomplished at 90 to 100 percent of the design capacity. The permittee shall notify DER's Central Florida District office 14 days prior to the compliance test.
5. The operating time shall not exceed 4004 hours per year.
6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit.
7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results, oil analysis report and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate.
8. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: September 30, 1987

SPECIFIC CONDITIONS:

Issued this 24 day of February,
1987.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


Dale Twachtmann, Secretary

___ pages attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

PERMITTEE:

National Aeronautics and Space
Administration - NASA
KSC - Headquarters Bldg.
Kennedy Space Center, FL 32899

Permit Number: AC 05-121640
Expiration Date: September 30, 1987
County: Brevard
Latitude/Longitude: 28° 29' 33" N
80° 34' 54" W
Project: 1.88 MMBtu/hr Hot Water
Generator #1

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 1.8 MMBtu/hr Hot Water Generator located at the Hangar AO and AM, Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center in Brevard County, Florida.

Construction shall be in accordance with the attached permit application except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 18, 1986.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Except as required pursuant to these specific conditions, the proposed hot water generator construction shall be carried out in accordance with the statements in the application.

2. The sulfur content of the No. 2 fuel oil to be burned in the proposed generator shall not exceed 0.5 percent by weight, as determined by ASTM Method D-1552. The fuel analysis reports of the oil used shall be recorded and these records shall be kept for a minimum of two years for regulatory agency inspection.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: September 30, 1987

SPECIFIC CONDITIONS:

3. The visible emissions from the proposed generator shall not exceed 20 percent opacity, six (6) minute average. DER Method 9 (17-2.700(6)(a)9, FAC) shall be used for the performance test conducted by the permittee.
4. The test of visible emissions shall be accomplished at 90 to 100 percent of the design capacity. The permittee shall notify DER's Central Florida District office 14 days prior to the compliance test.
5. The operating time shall not exceed 6552 hours per year.
6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit.
7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results, oil analysis report and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate.
8. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application.


PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: September 30, 1987

SPECIFIC CONDITIONS:

Issued this 24 day of February,
1987.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



Dale Twächtmann, Secretary

___ pages attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

PERMITTEE:
National Aeronautics and Space
Administration - NASA
KSC - Headquarters Bldg.
Kennedy Space Center, FL 32899

Permit Number: AC 05-121641
Expiration Date: September 30, 1987
County: Brevard
Latitude/Longitude: 28° 29' 33" N
80° 34' 54" W
Project: 1.88 MMBtu/hr Hot Water
Generator #2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 1.8 MMBtu/hr Hot Water Generator located at the Hangar AO and AM, Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center (Building No. M7-1354) in Brevard County, Florida.

Construction shall be in accordance with the attached permit application except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 18, 1986.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

- 1. Except as required pursuant to these specific conditions, the proposed hot water generator construction shall be carried out in accordance with the statements in the application.
- 2. The sulfur content of the No. 2 fuel oil to be burned in the proposed generator shall not exceed 0.5 percent by weight, as determined by ASTM Method D-1552. The fuel analysis reports of the oil used shall be recorded and these records shall be kept for a minimum of two years for regulatory agency inspection.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: September 30, 1987

SPECIFIC CONDITIONS:

3. The visible emissions from the proposed generator shall not exceed 20 percent opacity, six (6) minute average. DER Method 9 (17-2.700(6)(a)9, FAC) shall be used for the performance test conducted by the permittee.

4. The test of visible emissions shall be accomplished at 90 to 100 percent of the design capacity. The permittee shall notify DER's Central Florida District office 14 days prior to the compliance test.

5. The operating time shall not exceed 6552 hours per year.

6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit.

7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results, oil analysis report and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate.

8. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application.


PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: September 30, 1987

SPECIFIC CONDITIONS:

Issued this 24 day of February,
1987.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



Dale Twachtmann, Secretary

___ pages attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ
GOVERNOR
DALE TWACHTMANN
SECRETARY

PERMITTEE:
National Aeronautics and Space
Administration - NASA
KSC - Headquarters Bldg.
Kennedy Space Center, FL 32899

Permit Number: AC 05-122378
Expiration Date: September 30, 1987
County: Brevard
Latitude/Longitude: 28° 30' 19" N
80° 34' 52" W
Project: 1.25 MMBtu/hr Hot Water
Generator

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 1.25 MMBtu/hr Hot Water Generator located at the Hangar N, Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center in Brevard County, Florida.

Construction shall be in accordance with the attached permit application except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on July 3, 1986.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: September 30, 1987

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Except as required pursuant to these specific conditions, the proposed hot water generator construction shall be carried out in accordance with the statements in the application.

2. The sulfur content of the No. 2 fuel oil to be burned in the proposed generator shall not exceed 0.5 percent by weight, as determined by ASTM Method D-1552. The fuel analysis reports of the oil used shall be recorded and these records shall be kept for a minimum of two years for regulatory agency inspection.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: September 30, 1987

SPECIFIC CONDITIONS:

3. The visible emissions from the proposed generator shall not exceed 20 percent opacity, six (6) minute average. DER Method 9 (17-2.700(6)(a)9, FAC) shall be used for the performance test conducted by the permittee.
4. The test of visible emissions shall be accomplished at 90 to 100 percent of the design capacity. The permittee shall notify DER's Central Florida District office 14 days prior to the compliance test.
5. The operating time shall not exceed 3528 hours per year.
6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit.
7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results, oil analysis report and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate.
8. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: September 30, 1987

SPECIFIC CONDITIONS:

Issued this 24 day of February,
1987

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


Dale Twachtman, Secretary

___ pages attached.

of the oil. The department agrees with the applicant's proposal that the firing of No. 2 distillate oil containing 0.5 percent or less sulfur, by weight, is BACT for the proposed boilers.

The term "new oil" disallows the use of re-refined and waste oils, or any non-fossil fuels which were not considered in this BACT analysis.

Details of the Analysis May be Obtained by Contacting:

Barry Andrews, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:



C. H. Fancy, P.E., Deputy Bureau Chief

Date:

2/24/87

Approved by:



Dale Twachtmann, Secretary

Date:

24 February 1987

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION



Interoffice Memorandum

TO: Dale Twachtmann
THRU: Howard Rhodes *HR*
FROM: Clair Fancy *CF*
DATE: February 24, 1987
SUBJ: Approval of Air Construction Permits

FOR ROUTING TO OTHER THAN THE ADDRESSEE	
TO: _____	LOCTN: _____
TO: _____	LOCTN: _____
TO: _____	LOCTN: _____
FROM: _____	DATE: _____

RECEIVED
FEB 24 1987

Office of the Secretary

Attached for your approval and signature are four air construction permits and a best available control technology (BACT) determination to Kennedy Space Center to construct three hot water generators and one steam generator at the Cape Canaveral Air Force Station in Brevard County, Florida. There have been no controversies regarding these permits.

Day 90 for Permit Nos. AC 05-121639, AC 05-121640 and AC 05-121641 is March 2, 1987. Day 90 for Permit No. AC 05-122378 is March 21, 1987.

The Bureau recommends your approval and signature.

CF/ks

Attachment

National Aeronautics and
Space Administration

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

NASA

DER

JAN 16 1987 JAN 26 1987

BAQM

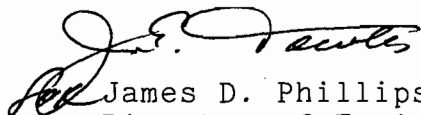
Reply to Attn of DF-EMS

Dept. of Environmental Regulation
Attn: Mr. Clair H. Fancy
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301

Subject: Notice of Intent Publication for Three Hot Water
Generators and One Steam Generator on CCAFS

Attached is a copy of the affidavit concerning the publication notice for the subject air pollution sources on Cape Canaveral Air Force Station. It has been brought to our attention that this notice was not sent directly to you as our contract with the newspaper required them to do. We apologize for the delay in your receiving this notice.

Please contact Mr. Mario Busacca at 305 867-4049 if additional information is required to process the application.



James D. Phillips
Director of Engineering Development

Enclosure

The Times

Published Weekly on Wednesday

THE TRIBUNE

Published Weekly on Wednesday

STAR-ADVOCATE

Published Weekly on Wednesday



Published Daily

STATE OF FLORIDA
COUNTY OF BREVARD

Before the undersigned authority personally appeared Linda L. Spicer who on oath says that he/she is Legal Advertising Clerk

of the FLORIDA TODAY, a newspaper published in Brevard County, Florida; that the attached copy of advertising being a Notice of Intent

_____ in the matter of _____
to construct two hot water generators (CC 43088B)

_____ in the _____ Court

was published in the FLORIDA TODAY NEWSPAPER
in the issues of September 18, 1986

Affiant further says that the said FLORIDA TODAY NEWSPAPER is a newspaper published in said Brevard County, Florida and that the said newspaper has heretofore been continuously published in said Brevard County, Florida regularly as stated above, and has been entered as second class mail matter at the post office in COCOA, said Brevard County, Florida for a period of one year next preceeding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in said newspaper.

Linda L. Spicer

Sworn and subscribed to before me this

18th September 86
day of _____ D., 19 _____

Marie C. Rehl

State of Florida
Department of
Environmental Regulation
Notice of Intent

The Department gives notice of its intent to issue permits to the National Aeronautics and Space Administration (NASA) to construct two 1.3 MMBtu/hr hot water generators, one 2.1 MMBtu/hr steam generator, and one 1.25 MMBtu/hr hot water generator at the Cape Canaveral Air Force Station in Brevard County, Florida. A determination of best available control technology (BACT) was required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except for legal holidays, at:
Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2408

Dept. of Environmental Regulation
St. Johns River District
3319 Mequire Blvd., Suite 232
Gainesville, Florida 32602

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

TC83543-1T-9/18, 1986, Thursday

STATE OF FLORIDA
COMMISSION EXPIRES SEP 1

P 408 532 040

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	
Mr. James D. Phillips	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	
8/25/86	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

● **SENDER: Complete items 1, 2, 3 and 4.**

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
Mr. James D. Phillips
Dir. of Engineering Dev.
NASA, DF-EMS
Kennedy Space Center, FL 32899

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P 408 532 040

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X
6. Signature - Agent
X *J.M. Willis*
7. Date of Delivery
8/27/86
8. Addressee's Address (ONLY if requested and fee paid)

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

August 21, 1986

CERTIFIED MAIL-RETURN RECEIPT REQUESTED


Mr. James D. Phillips
Director of Engineering Development
NASA, DF-EMS
Kennedy Space Center, Florida 32899

Dear Mr. Phillips:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and draft permits for the construction of three hot water generators and a steam generator at the Cape Canaveral Air Force Station, Brevard County, Florida.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,


C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa

Attachments

cc: Tom Sawicki

State of Florida
Department of Environmental Regulation
Notice of Intent

The Department gives notice of its intent to issue permits to the National Aeronautics and Space Administration (NASA) to construct two 1.8 MMBtu/hr hot water generators, one 2.1 MMBtu/hr steam generator, and one 1.25 MMBtu/hr hot water generator at the Cape Canaveral Air Force Station in Brevard County, Florida. A determination of best available control technology (BACT) was required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009, Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dept. of Environmental Regulation
St. Johns River District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

National Aeronautics and Space	DER File No. AC 05-121640
Administration - NASA	AC 05-121641
KSC - Headquarters Building	AC 05-121639
Kennedy Space Center, Florida 32899	AC 05-122378

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue permits (copies attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, National Aeronautics and Space Administration, applied on June 18, and July 7, 1986, to the Department of Environmental Regulation for permits to construct two 1.8 MMBtu/hr hot water generators, one 2.1 MMBtu/hr steam generator, and one 1.25 MMBtu/hr hot water generator at the Cape Canaveral Air Force Station in Brevard County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that air construction permits were needed for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, FAC, you (the applicant) are required to publish at your own expense the enclosed Notice of Proposed Agency Action on permit application. The notice must be published one time only in a section of a major local newspaper of general circulation in the county in which the project is located and within thirty (30)

days from receipt of this intent. Proof of publication must be provided to the Department within seven days of publication of the notice. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permits.

The Department will issue the permits with the attached conditions unless petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S. A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. Petitions must comply with the requirement of Florida Administrative Code Rules 17-103.155 and 28-5.201 (copies enclosed) and be filed with (received by) the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32301-8241. Petitions filed by the permit applicant must be filed within fourteen (14) days of receipt of this intent. Petitions filed by other persons must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this intent, whichever first occurs. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions will be dismissed.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

Copies furnished to:

James D. Phillips, NASA
Tom Sawicki, DER St. Johns River District

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on August 25, 1986.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Patricia B. Adams 8/25/86
Clerk Date

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

- (1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.
- (2) All petitions filed under these rules should contain:
 - (a) The name and address of each agency affected and each agency's file or identification number, if known;
 - (b) The name and address of the petitioner or petitioners;
 - (c) All disputed issues of material fact. If there are none, the petition must so indicate;
 - (d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;
 - (e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;
 - (f) A demand for the relief to which the petitioner deems himself entitled; and
 - (g) Such other information which the petitioner contends is material.

DER1985 RULES OF ADMINISTRATIVE PROCEDURE - NON-RULEMAKING 17-103

of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to an administrative determination (hearing) under Section 120.57, F.S.

(4) Notice to substantially affected persons concerning applications for Department permits is an essential and integral part of the state environmental licensing process. Therefore, no application for a permit for which publication of notice is required shall be granted until and unless proof of publication of Notice is furnished to the appropriate Department permitting office.

(5)(a) Any applicant or person benefiting from the Department's action may elect to publish notice of proposed agency action in the manner provided by subsection (2) or (3). Any person who elects to publish notice of proposed agency action, upon presentation of proof of publication to the Department, prior to final agency action, shall be entitled to the same benefits under this rule as a person who is required to publish notice of proposed agency action. Since persons whose substantial interests are affected by a Department decision on a permit application may petition for an administrative proceeding within fourteen (14) days after receipt of notice and since, unless notice is given or published as prescribed in this rule, receipt of notice can occur at any time, the applicant or persons benefiting from the Department's action cannot justifiably rely on the finality of

the Department's decision without the notice having been duly given or published.

(b) The notices required by this rule may be combined with other notices required by the Department pursuant to Chapter 403, 376, or 253, F.S., or Chapter 17, FAC.

(c) The provisions of this section shall also apply to the permitting of hazardous waste facilities, but only to the extent it is consistent with Chapter 17-30, Part IV, FAC. Whenever Chapter 17-30, Part IV, FAC, provides for a different time or notice procedure than that set forth in this section the time and notice provisions of Chapter 17-30 shall govern.

(6) Failure to publish any notice of application, notice of proposed agency action, or notice of agency action required by the Department shall be an independent basis for the denial of a permit. Specific Authority: 120.53, 403.0876, 403.815, F.S. Law Implemented: 120.53, F.S. History: New 9-20-79, Amended 4-28-81, Transferred from 17-1.62 and Amended 6-1-84.

17-103.155 Petition for Administrative Hearing; Waiver of Right to Administrative Proceeding.

(1)(a) Any person whose substantial interests may be affected by proposed or final agency action may file a petition for administrative proceeding. A petition shall be in the form required by this Chapter and Chapter 28-5, FAC, and shall be filed (received) in the Office of General Counsel of the Department within fourteen (14) days of receipt of notice of proposed agency action or within fourteen (14) days of receipt of notice of

17-103.150(3)(d) -- 17-103.155(1)(a)

DER1985 RULES OF ADMINISTRATIVE PROCEDURE - NON-RULEMAKING 17-103

agency action whenever there is no public notice of proposed agency action. In addition to the requirements of Rule 28-5.201, FAC, the Petition must specify the county in which the project is or will be located.

(b) Failure to file a petition within fourteen (14) days of receipt of notice of agency action or fourteen (14) days of receipt of notice of proposed agency action, whichever notice first occurs, shall constitute a waiver of any right to request an administrative proceeding under Chapter 120, F.S.

(c) When there has been no publication of notice of agency action or notice of proposed agency action as prescribed in Rule 17-103.150, FAC, a person who has actual knowledge of the agency action or has knowledge which would lead a reasonable person to conclude that the Department has taken final agency action, has a duty to make further inquiry within fourteen (14) days of obtaining such knowledge by contacting the Department to ascertain whether action has occurred. The Department shall upon receipt of such an inquiry, if agency action has occurred, promptly provide the person with notice as prescribed by Rule 17-103.150, FAC. Failure of the person to make inquiry with the Department within fourteen (14) days after obtaining such knowledge may estop the person from obtaining an administrative proceeding on the agency action.

(2)(a) "Receipt of notice of agency action" means receipt of written notice of final agency action, as prescribed by Department rule, or the publication, pursuant to Department rule, of notice of final agency action, whichever first

occurs.

(b) "Receipt of notice of proposed agency action" means receipt of written notice (such as a letter of intent) that the Department proposes to take certain action, or the publication pursuant to Department rule of notice of proposed agency action, whichever first occurs.

(3) Notwithstanding any other provision in this Chapter, should a substantially affected person who fails to timely request a hearing under Section 120.57, F.S., administratively appeal the final Department action or order, the record on appeal should be limited to:

(a) the application, and accompanying documentation submitted by the applicant prior to the issuance of the agency's intent to issue or deny the requested permit.

(b) the materials and information relied upon by the agency in determining the final agency action or order;

(c) any notices issued or published; and

(d) the final agency action or order entered concerning the permit application.

(4) In such cases where persons do not timely exercise their rights accorded by Section 120.57(1), Florida Statutes, the allegations of fact contained in or incorporated by the final agency action shall be deemed uncontested and true, and appellants may not dispute the truth of such allegations upon subsequent appeal.

(5) Any applicant may challenge the Department's request for additional information by filing with the Office of General Counsel an appropriate petition for administrative proceeding pursuant to Section 120.60, F.S., following receipt by

the applicant of the Department's notification, pursuant to Section 403.0876, F.S., that additional information is required.

Specific Authority: 120.53, 403.0876, 403.815, F.S. Law Implemented: 120.53, F.S.

History: New 9-20-79, Amended 4-28-81, Transferred from 17-1.62 and Amended 6-1-84.

17-103.160 Uniformity in Approval and Denial of Applications for Department Permits and Certifications. To the extent possible and consistent with the public interest, the Department approves and denies applications for permits and certifications on a uniform and consistent basis. Final Department actions on applications for permits and certifications shall be consistent with prior Department actions, unless deviation therefrom is explained by the Department in writing or the hearing officer who submits a recommended order to the Department for final agency action in accordance with Section 120.57, Florida Statutes.

Specific Authority: 120.53(1), F.S. Law Implemented: 120.53(1), 120.68(12), F.S. History: New 2-6-78, Transferred from 17-1.63, 6-1-84.

17-103.170 Designation, Preparation and Transmittal of Record for Administrative Appeals.

When any Department action or order is the subject of an administrative appeal under Chapter 17-103, Part II, FAC, the following requirements shall apply:

(1) Designation of Record. Within fifteen (15) days of rendition of the Department's final order, the appellant shall designate

to the Department, in writing, with copies to other parties, those documents or things under the control of or in the possession of the Department which the appellant desires to have included in the record, and which were received or considered in the Department proceeding below. If a proceeding was reported by mechanical recording devices, the appellant shall designate those portions of the proceeding for which it requires written transcription or tapes for transcription. Any other party may designate other portions of the record in the manner provided herein. Such cross-designation shall be filed with the Department, with copies provided other parties, within seven (7) days after receipt of the designation by the appellant.

(2) Original Record. The Department shall thereupon include in the record all of the designated portions of the original papers and exhibits in the proceedings or matter from which administrative appeal is taken, together with a copy of any such parts of the proceedings as were stenographically reported or transcribed from tapes, and as have been designated by the parties and certified by a notary public, the reporter, or other officer for inclusion in the record on appeal or review, and certified copies of the order, if any, of which review is sought. The Department may, at its discretion, substitute certified copies for original papers or documents in its possession.

(3) Preparation of Record. Upon tender or deposit by appellant of the estimated cost of preparation, the Department shall prepare the record in accordance with the designations of the parties. The cost of preparation, and reproduction,

Technical Evaluation
and
Preliminary Determination

National Aeronautics and Space Administration
Kennedy Space Center

State Permit Nos.

AC 05-121640	1.8	MMBtu/hr, Hot Water Generator #1
AC 05-121641	1.8	MMBtu/hr, Hot Water Generator #2
AC 05-121639	2.1	MMBtu/hr, Steam Generator
AC 05 122378	1.25	MMBtu/hr, Hot Water Generator

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

August 18, 1986

I. SYNOPSIS OF APPLICATION

I.1. National Aeronautics and Space Administration - NASA
John F. Kennedy Space Center (KSC)
DF-EMS
Kennedy Space Center, Florida 32899

I.2. REVIEWING AND PROCESS SCHEDULE

Date of receipt of applications:
June 18, 1986 and July 3, 1986

Completeness review (30 days):
July 18, 1986 and August 2, 1986

Application's completeness date:
June 18, 1986 and July 3, 1986

II. FACILITY INFORMATION

II.1 Facility Location

The proposed facility will be located at the Hangars AO, AM, and L, Cape Canaveral Air Force Station, KSC in Brevard County, Florida. The latitude and longitude are 28° 29' 33" North and 80° 34' 54" West, respectively.

II.2 Standard Industrial Classification Code (SIC)

The Kennedy Space Center is classified as follows:

Group No. 966, Space Research and Technology
Industry No. 9661, Space Research and Technology

II.3 Facility Category

The Kennedy Space Center (KSC) is classified as a major emitting facility for sulfur dioxide (SO₂) and volatile organic compounds (VOC). Its emissions as reported by the company are under the 250 TPY threshold for the above mentioned pollutants.

This facility category is not on the list of the 28 Major Facility Categories, Table 500-1, Chapter 17-2, Florida Administrative Code.

III. PROJECT DESCRIPTION

The proposed project consists of constructing two 1.8 MMBtu/hr hot water generators, one 2.1 MMBtu/hr steam generator and one 1.25 MMBtu/hr hot water generator at the Cape Canaveral Air Force Station (CCAFS). The two hot water generators will be used for heating and humidity control at Hangar AO and AM on

CCAFS. These two generators will be operated in parallel with one boiler operating full time and the second operating as demand requires. The single 2.1 MMBtu/hr steam generator will provide temperature control and autoclave steam for the Hangar L facility. The 1.25 MMBtu/hr hot water generator will provide humidity and temperature control for the Hangar N facility.

IV. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes and Chapter 17-2, Florida Administrative Code.

The Kennedy Space Center is located in an area (Brevard County) currently designated attainment for all criteria pollutants in accordance with Florida Administrative Code, Rule 17-2.420.

This facility, a major emitting facility for SO₂ and VOC, is not on the list of the 28 Major Facility Categories, Florida Administrative Code, Table 500-1. Therefore, this project is exempt from provisions of Rule 17-2.500, Prevention of Significant Deterioration.

The proposed sources shall be permitted under Rule 17-2.520, Sources Not Subject to Prevention of Significant Deterioration or Nonattainment Requirements. Emissions from the boiler must comply with the standards specified in Rule 17-2.600(6), FAC.

V. SOURCE IMPACT ANALYSIS

V.1. Emission Limitations

The air pollutants emitted from the proposed generators will be sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), volatile organic compounds (VOC) and carbon monoxide.

Table 1 summarizes potential to emit all pollutants regulated under the Act which are affected by the proposed project. As the tables show, there is not a significant emission increase of any pollutant. The permitted emissions are in compliance with all applicable requirements of Chapter 17-2, Florida Administrative Code.

Table 1
SUMMARY OF EMISSIONS

Source: 1.8 MMBtu/hr, Hot Water Generator*

Pollutant	lb/hr	tons/yr	PSD**(tons/yr)
Sulfur Dioxide (SO ₂)	0.96	3.1	40
Nitrogen Oxide (NO _x)	0.03	1.0	40
Particulate Matter (PM)	0.03	0.1	25
Carbon Monoxide (CO)	0.07	0.2	100

*This emission rate is for each hot water generator.

**Prevention of Significant Deterioration (PSD) levels.

Source: 2.1 MMBtu/hr Steam Generator

Pollutant	lb/hr	tons/yr	PSD**(tons/yr)
SO ₂	1.1	2.2	40
CO	0.1	0.2	100
NO _x	0.33	0.7	40
Particulate	0.03	0.1	25

Source: 1.25 MMBtu/hr, Hot Water Generator

Pollutant	lb/hr	tons/yr	PSD**(tons/yr)
SO ₂	0.64	1.10	40
CO	0.05	0.08	100
NO _x	0.20	0.35	40
Particulate	0.02	0.03	25

VI.2 Air Quality Analysis

From a technical review of the application, the department has determined that the construction and operation of these sources will not have a significant impact on Florida's ambient air quality standards.

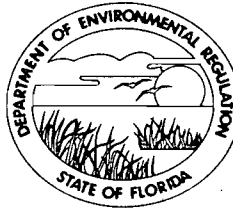
VI. CONCLUSION

Based on an evaluation of the application, the department concludes that the proposed sources will comply with related state air regulations, provided certain specific conditions are met.

The general and specific conditions are listed in the attached draft state permits.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
National Aeronautics and Space
Administration - NASA
KSC - Headquarters Bldg.
Kennedy Space Center, FL 32899

Permit Number: AC 05-121639
Expiration Date: March 31, 1987
County: Brevard
Latitude/Longitude: 28° 29' 33" N
80° 34' 54" W
Project: 2.1 MMBtu/hr Steam
Generator

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 2.1 MMBtu/hr steam generator located at the Hangar L, Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center in Brevard County, Florida.

Construction shall be in accordance with the attached permit application except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 18, 1986.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

- 1. Except as required pursuant to these specific conditions, the proposed hot water generator construction shall be carried out in accordance with the statements in the application.
- 2. The sulfur content of the No. 2 fuel oil to be burned in the proposed generator shall not exceed 0.5 percent by weight, as determined by ASTM Method D-1552. The fuel analysis reports of the oil used shall be recorded and these records shall be kept for a minimum of two years for regulatory agency inspection.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: March 31, 1987

SPECIFIC CONDITIONS:

3. The visible emissions from the proposed generator shall not exceed 20 percent opacity, six (6) minute average. DER Method 9 (17-2.700(6)(a)9, FAC) shall be used for the performance test conducted by the permittee.

4. The test of visible emissions shall be accomplished at 90 to 100 percent of the design capacity. The permittee shall notify DER's St. Johns River District office 14 days prior to the compliance test.

5. The operating time shall not exceed 4004 hours per year.

6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit.

7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results, oil analysis report and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate.

8. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121639
Expiration Date: March 31, 1987

SPECIFIC CONDITIONS:

Issued this _____ day of _____,
19__.

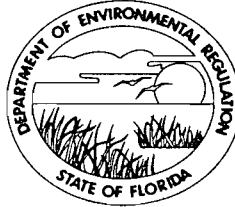
STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

VICTORIA J. TSCHINKEL, Secretary

_____ pages attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE: National Aeronautics and Space Administration - NASA
KSC - Headquarters Bldg.
Kennedy Space Center, FL 32899

Permit Number: AC 05-121640
Expiration Date: March 31, 1987
County: Brevard
Latitude/Longitude: 28° 29' 33" N
80° 34' 54" W
Project: 1.8 MMBtu/hr Hot Water Generator #1

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 1.8 MMBtu/hr Hot Water Generator located at the Hangar AO and AM, Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center in Brevard County, Florida.

Construction shall be in accordance with the attached permit application except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 18, 1986.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Except as required pursuant to these specific conditions, the proposed hot water generator construction shall be carried out in accordance with the statements in the application.
2. The sulfur content of the No. 2 fuel oil to be burned in the proposed generator shall not exceed 0.5 percent by weight, as determined by ASTM Method D-1552. The fuel analysis reports of the oil used shall be recorded and these records shall be kept for a minimum of two years for regulatory agency inspection.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: March 31, 1987

SPECIFIC CONDITIONS:

3. The visible emissions from the proposed generator shall not exceed 20 percent opacity, six (6) minute average. DER Method 9 (17-2.700(6)(a)9, FAC) shall be used for the performance test conducted by the permittee.
4. The test of visible emissions shall be accomplished at 90 to 100 percent of the design capacity. The permittee shall notify DER's St. Johns River District office 14 days prior to the compliance test.
5. The operating time shall not exceed 6552 hours per year.
6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit.
7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results, oil analysis report and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate.
8. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121640
Expiration Date: March 31, 1987

SPECIFIC CONDITIONS:

Issued this _____ day of _____,
19__.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

VICTORIA J. TSCHINKEL, Secretary

_____ pages attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
National Aeronautics and Space
Administration - NASA
KSC - Headquarters Bldg.
Kennedy Space Center, FL 32899

Permit Number: AC 05-121641
Expiration Date: March 31, 1987
County: Brevard
Latitude/Longitude: 28° 29' 33" N
80° 34' 54" W
Project: 1.8 MMBtu/hr Hot Water
Generator #2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 1.8 MMBtu/hr Hot Water Generator located at the Hangar AO and AM, Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center (Building No. M7-1354) in Brevard County, Florida.

Construction shall be in accordance with the attached permit application except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 18, 1986.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD).
- Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Except as required pursuant to these specific conditions, the proposed hot water generator construction shall be carried out in accordance with the statements in the application.
2. The sulfur content of the No. 2 fuel oil to be burned in the proposed generator shall not exceed 0.5 percent by weight, as determined by ASTM Method D-1552. The fuel analysis reports of the oil used shall be recorded and these records shall be kept for a minimum of two years for regulatory agency inspection.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: March 31, 1987

SPECIFIC CONDITIONS:

3. The visible emissions from the proposed generator shall not exceed 20 percent opacity, six (6) minute average. DER Method 9 (17-2.700(6)(a)9, FAC) shall be used for the performance test conducted by the permittee.
4. The test of visible emissions shall be accomplished at 90 to 100 percent of the design capacity. The permittee shall notify DER's St. Johns River District office 14 days prior to the compliance test.
5. The operating time shall not exceed 6552 hours per year.
6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit.
7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results, oil analysis report and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate.
8. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-121641
Expiration Date: March 31, 1987

SPECIFIC CONDITIONS:

Issued this _____ day of _____,
19__.

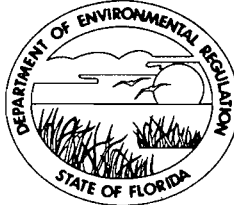
STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

VICTORIA J. TSCHINKEL, Secretary

_____ pages attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

National Aeronautics and Space
Administration - NASA
KSC - Headquarters Bldg.
Kennedy Space Center, FL 32899

Permit Number: AC 05-122378
Expiration Date: March 31, 1987
County: Brevard
Latitude/Longitude: 28° 30' 19" N
80° 34' 52" W
Project: 1.25 MMBtu/hr Hot Water
Generator

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 1.25 MMBtu/hr Hot Water Generator located at the Hangar N, Cape Canaveral Air Force Station (CCAFS), Kennedy Space Center in Brevard County, Florida.

Construction shall be in accordance with the attached permit application except as otherwise noted in the Specific Conditions.

Attachments are as follows:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on July 3, 1986.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- (x) Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: March 31, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

- 1. Except as required pursuant to these specific conditions, the proposed hot water generator construction shall be carried out in accordance with the statements in the application.
- 2. The sulfur content of the No. 2 fuel oil to be burned in the proposed generator shall not exceed 0.5 percent by weight, as determined by ASTM Method D-1552. The fuel analysis reports of the oil used shall be recorded and these records shall be kept for a minimum of two years for regulatory agency inspection.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: March 31, 1987

SPECIFIC CONDITIONS:

3. The visible emissions from the proposed generator shall not exceed 20 percent opacity, six (6) minute average. DER Method 9 (17-2.700(6)(a)9, FAC) shall be used for the performance test conducted by the permittee.
4. The test of visible emissions shall be accomplished at 90 to 100 percent of the design capacity. The permittee shall notify DER's St. Johns River District office 14 days prior to the compliance test.
5. The operating time shall not exceed 3528 hours per year.
6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration of the construction permit and submit a new schedule and request for an extension of the construction permit.
7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with test results, oil analysis report and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate.
8. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application.

PERMITTEE:
Kennedy Space Center

Permit Number: AC 05-122378
Expiration Date: March 31, 1987

SPECIFIC CONDITIONS:

Issued this _____ day of _____,
19__.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

VICTORIA J. TSCHINKEL, Secretary

_____ pages attached.

of the oil. The department agrees with the applicant's proposal that the firing of No. 2 distillate oil containing 0.5 percent or less sulfur, by weight, is BACT for the proposed boilers.

The term "new oil" disallows the use of re-refined and waste oils, or any non-fossil fuels which were not considered in this BACT analysis.

Details of the Analysis May be Obtained by Contacting:

Barry Andrews, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended by:

C. H. Fancy, P.E., Deputy Bureau Chief

Date: _____

Approved by:

Victoria J. Tschinkel, Secretary

Date: _____



United States Treasury

15-51
000 B 054,626,194



Pay to
the order of

07 01 86 71 BIRMINGHAM, AL.
A2586 02 NASA JFK

Check No. 3506 06930017
KENNEDY FL 80004904

STATE OF FLORIDA
DEPT OF ENVIRONMENTAL
REGULATIONS
PERMIT HOT WATER
GENERATOR

*****100*00

FOR DEPOSIT ONLY
J.P. COOPER & CO. BANKERS
MEMBER FDIC

⑈ 35068 ⑈ ⑆000000518⑆ 069300176⑈

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

No 76129

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from United States Treasury Date July 7, 1986

Address _____ Dollars \$ 100.00

Applicant Name & Address NASA Kennedy Space Center

Source of Revenue _____

Revenue Code 001031 Application Number AC 05-122378

By Patricia G. Adams

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

JUL 3 1986

Reply to Attn of

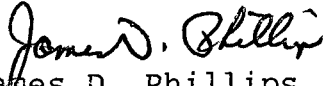
DF-EMS

Dept. of Environmental Regulation
Attn: Mr. Clair H. Fancy
2600 Blair Stone Road
Tallahassee, FL 32301

Subject: Air Permit for Construction of a Hot Water Generator at
Hangar N - Kennedy Space Center

Enclosed are four copies of the permit application for construction
of the subject facility at Kennedy Space Center. Also enclosed
is a \$100 check for permit fees.

Any questions concerning this application should be addressed to
Mr. Mario Busacca at 305 867-4049.


James D. Phillips
Director of Engineering Development

Enclosures

DER
JUL 7 1986
BAQM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



DER

JUL 7 1986

BAQM

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Hot Water Generator New¹ [] Existing¹
APPLICATION TYPE: [X] Construction [] Operation [] Modification
COMPANY NAME: National Aeronautics and Space Administration COUNTY: Brevard
Identify the specific emission point source(s) addressed in this application (i.e. Line
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) No. 2 Oil Fired Hot Water Heater
SOURCE LOCATION: Street Hangar N City CCAFS
UTM: East _____ North _____
Latitude 28° 30' 19"N Longitude 80° 34' 52"W
APPLICANT NAME AND TITLE: James D. Phillips, Director of Engineering Development
APPLICANT ADDRESS: John F. Kennedy Space Center, Kennedy Space Center, FL 32899

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of National Aeronautics and Space Administration
I certify that the statements made in this application for a Construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: [Signature]
for James D. Phillips, Director of Engineering Development
Name and Title (Please Type) opment

Date: 7/3/86 Telephone No. (305) 867-2565

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Exempt Per 17-4.05(3)

Signed

J. D. Phillips
for James D. Phillips

Name (Please Type)

National Aeronautics and Space Administration

Company Name (Please Type)

John F. Kennedy Space Center, Kennedy Space Center, FL

Mailing Address (Please Type)

32899

Florida Registration No. _____ Date: _____ Telephone No. (305) 867-2565

SECTION II: GENERAL PROJECT INFORMATION

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

A single 1.25 mm Btu/hr input high temperature hot waterheater for humidity and temperature control is to be constructed at the Hangar N Facility.

- B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction August 1986 Completion of Construction September 1986

- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

N/A

- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

E. Requested permitted equipment operating time: hrs/day _____; days/wk _____; wks/yr _____; if power plant, hrs/yr _____; if seasonal, describe: Winter Operations: hrs/day 12; days/wk 7; wks/yr 12. Remainder Year: hrs/day 9; days/wk 7; wks/yr 40.

F. If this is a new source or major modification, answer the following questions. (Yes or No)

- 1. Is this source in a non-attainment area for a particular pollutant? No
 - a. If yes, has "offset" been applied? _____
 - b. If yes, has "Lowest Achievable Emission Rate" been applied? _____
 - c. If yes, list non-attainment pollutants. _____
- 2. Does best available control technology (BACT) apply to this source? N/A
If yes, see Section VI.
- 3. Does the State "Prevention of Significant Deterioration" (PSD) requirement apply to this source? If yes, see Sections VI and VII. N/A
- 4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? N/A
- 5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? N/A
- H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? N/A
 - a. If yes, for what pollutants? _____
 - b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: N/A

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

- 1. Total Process Input Rate (lbs/hr): N/A
- 2. Product Weight (lbs/hr): N/A

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission ¹		Allowed ⁴ Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
SO ₂	0.64				2.258	1.1	
CO	0.045				159	0.08	
NO _x	0.2				706	0.35	
Part.	0.02				70.6	0.03	

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

⁴Emission, if source operated without control (See Section V, Item 3).

J. Control Devices: (See Section V, Item 4) N/A

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 2 Fuel Oil	9 gal./hr	9 gal./hr	1.25

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: 0.5 Percent Ash: 0.006
 Density: 7.080 lbs/gal Typical Percent Nitrogen: -
 Heat Capacity: 19,568 BTU/lb 138,541 BTU/gal
 Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average 30 Maximum 40

G. Indicate liquid or solid wastes generated and method of disposal.

None

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. For a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. For an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY N/A

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes No

Contaminant	Rate or Concentration

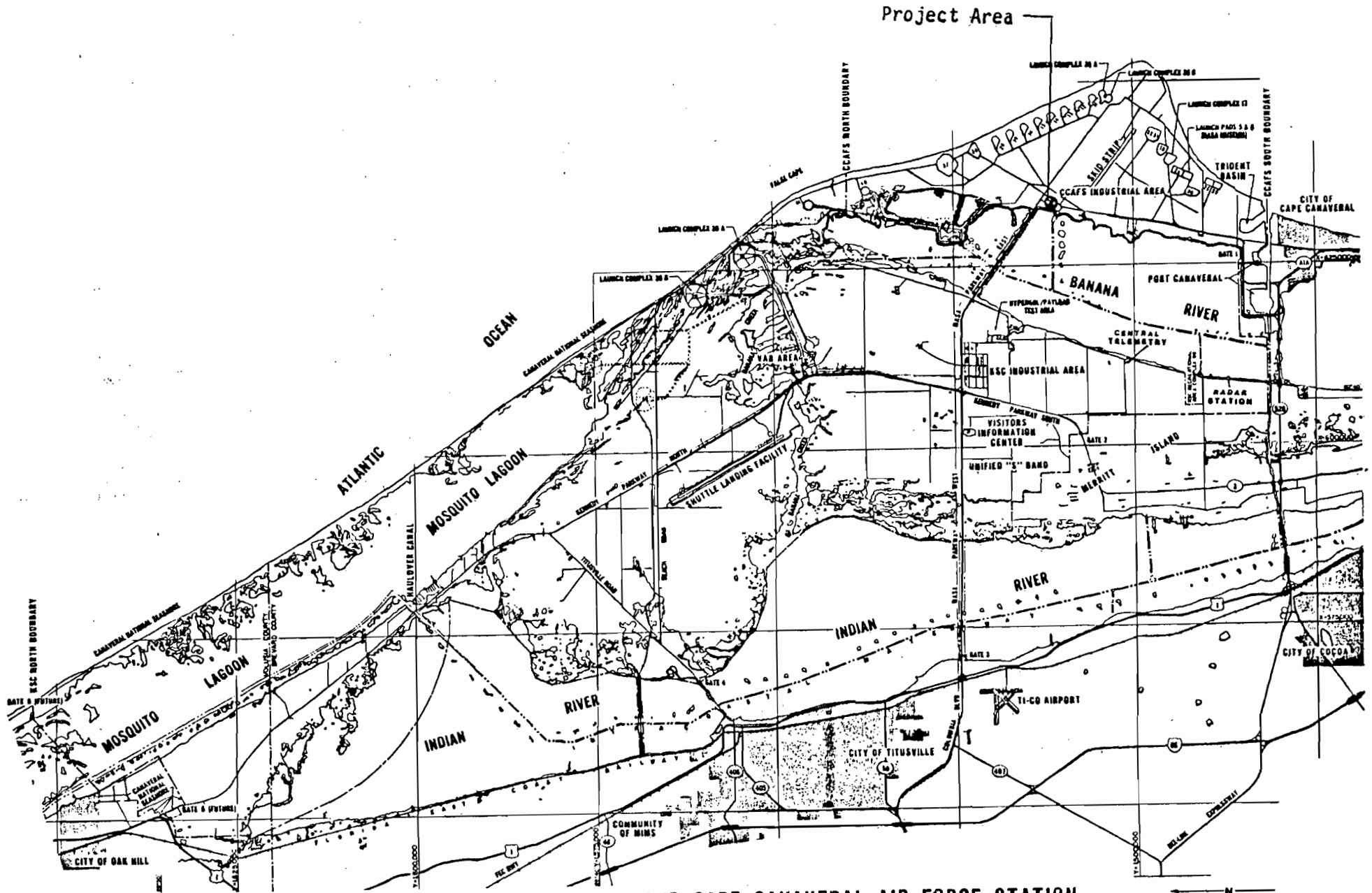
C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

- | | |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:* | 4. Capital Costs: |

Explain method of determining



JOHN F. KENNEDY SPACE CENTER AND CAPE CANAVERAL AIR FORCE STATION

Figure 1. Hanger N. Hot Water Heater

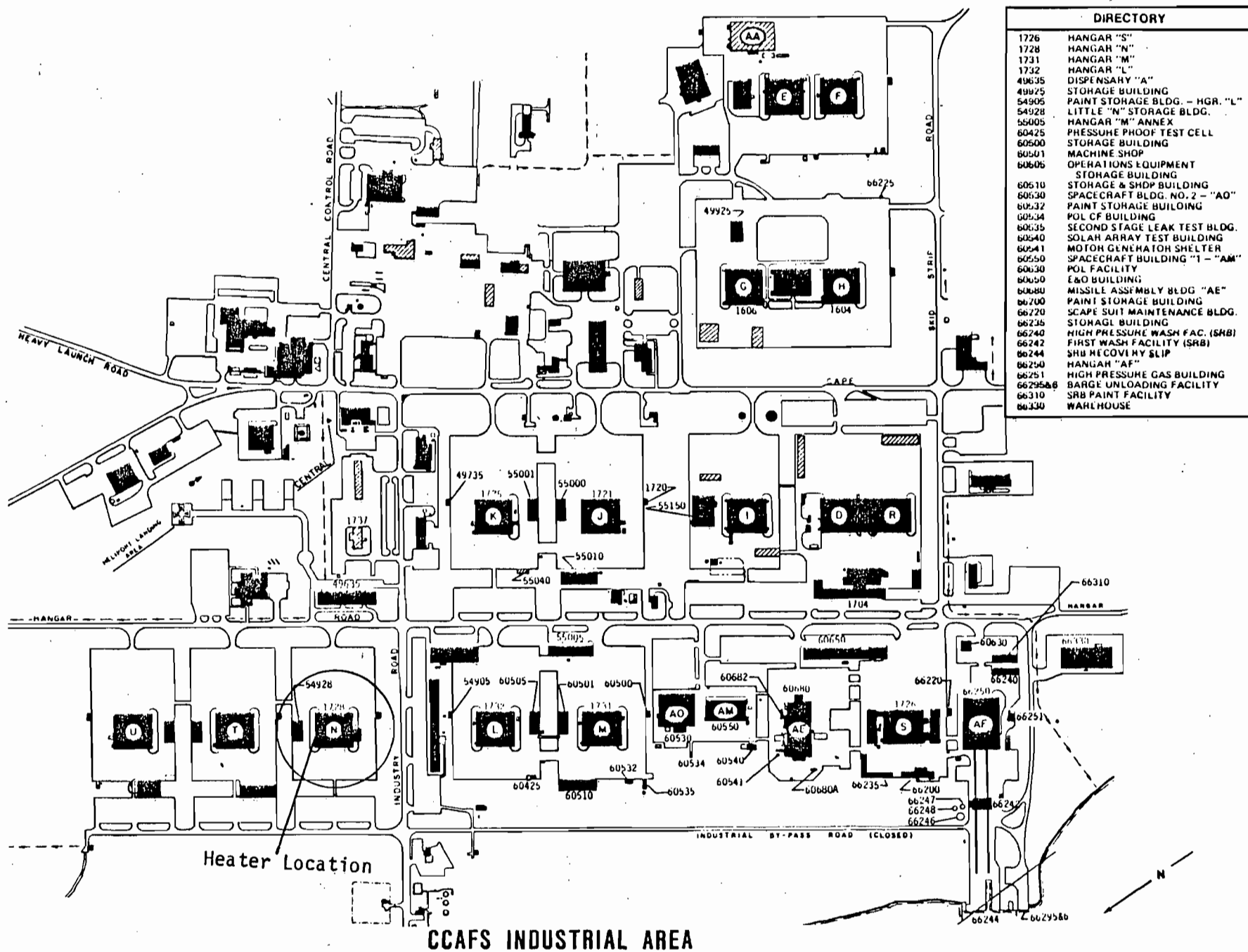


Figure 2. Hangar N Hot Water Heater Location

WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY STATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IMPLICITLY LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

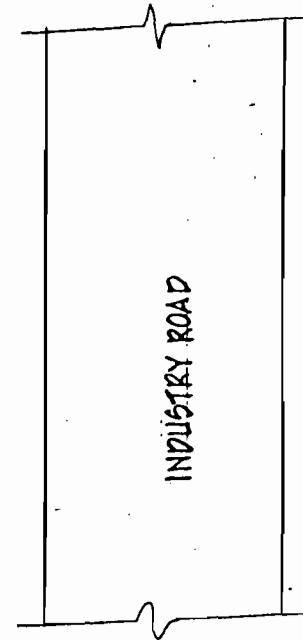
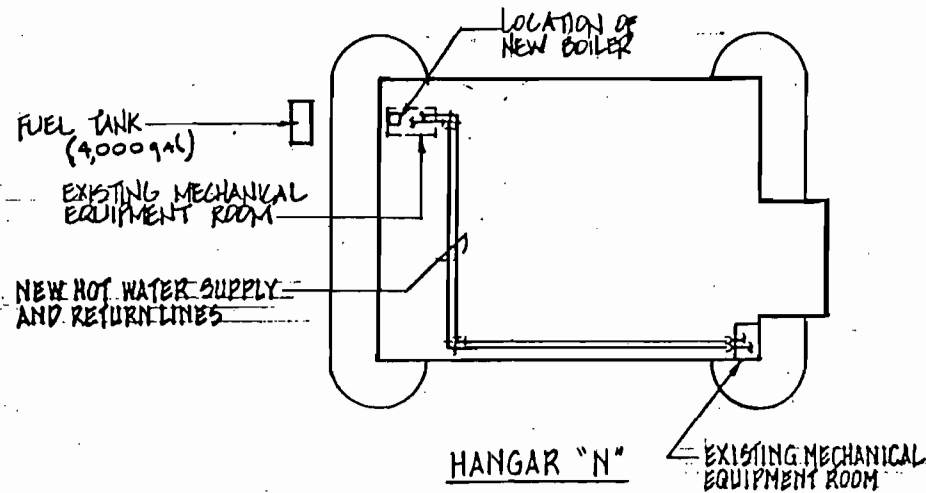


Figure 3. Hangar N Hot Water Heater

SITE PLAN

1" = 60'-0"



SYM.	ZONE	DESCRIPTION	DATE	APPROVED
REVISIONS				
SIGNATURES		DATE		
DRAWN		NATIONAL AERONAUTICS AND SPACE ADMINISTRATION JOHN F. KENNEDY SPACE CENTER, NASA KENNEDY SPACE CENTER, FLORIDA		
CHECKED		HANGAR N WAFS-P.E.R. HEATING PLANTS		
ENGINEER				
SUBMITTED		SIZE	DWG. NO.	
APPROVED		B		
PROJ. NO.			SHEET	OF

Hours of Operation:

$$(12 \text{ hours/day})(7 \text{ days/wk})(12 \text{ wks/yr}) = 1008 \text{ hrs/yr}$$

$$(9 \text{ hrs/day}) (7 \text{ days/wk}) (40 \text{ wks/yr}) = 2520 \text{ hrs/yr}$$

Potential Maximum Emissions:

$$\text{Max heat Input} = 1.2 \times 10^6 \text{ Btu/hr}$$

$$\text{Operating Hours} = 3258$$

No. 2 Fuel Oil: 0.5% Sulfur by weight max.

From Fuel Analysis: 138,541 Btu/gal

$$\text{Fuel Usage} = 1.25 \times 10^6 \text{ Btu/hr} / 138,541 \text{ Btu/gal} = 9 \text{ gal/hr}$$

Emissions:

$$\text{SO}_2: 142 \text{ lb/1000 gal} = 142 (0.5) = 71 \text{ lb/1000 gal}$$

$$(71.0 \text{ lb/1000 gal}) (9 \text{ gal/hr}) = 0.64 \text{ lb/hr}$$

$$= 2,258 \text{ lb/yr} = 1.12 \text{ TPY}$$

$$\text{CO: } (5 \text{ lb/1000 gal}) (9 \text{ gal/hr}) = 0.045 \text{ lb/hr}$$

$$= 159 \text{ lb/yr} = 0.08 \text{ TPY}$$

$$\text{NO}_x: (22 \text{ lb/1000 gal}) (9 \text{ gal/hr}) = 0.2 \text{ lb/hr}$$

$$= 706 \text{ lb/yr} = 0.35 \text{ TPY}$$

$$\text{Part.: } (2 \text{ lb/1000 gal}) (9 \text{ gal/hr}) = 0.02 \text{ lb/hr}$$

$$= 70.6 \text{ lb/yr} = 0.03 \text{ TPY}$$

DIMENSIONS

IN FEET AND INCHES—CENTIMETERS

SPL, SPH, SPW

25 through 150 HP
245 KW through 1471 KW

Handwritten: "HANGER 'N'"

SERIES	542										
	25 HP	245 KW	30 HP	294 KW	40 HP	392 KW	50 HP	490 KW	60 HP	588 KW	
A—Overall Length (c)	6' 11"	210.8	7' 8"	233.7	10' 3"	312.4	11' 10"	360.7	13' 6"	411.5	
B—Length of Shell	4' 11"	149.9	5' 9"	175.3	7' 3"	221	8' 10"	269.2	10' 5"	317.5	
C—Length of Skid	4' 9"	144.8	5' 6"	167.6	7' 1"	215.9	8' 8"	264.2	10' 3"	312.4	
D—Width of Skid	2' 6"	76.2	2' 6"	76.2	2' 6"	76.2	2' 6"	76.2	2' 6"	76.2	
E—Boiler Width	3' 11"	119.4	3' 11"	119.4	3' 11"	119.4	3' 11"	119.4	3' 11"	119.4	
E1—Overall Boiler Width	4' 4"	132.1	4' 4"	132.1	4' 4"	132.1	4' 4"	132.1	4' 4"	132.1	
F—Height of Vent Conn.	4' 2"	127	4' 2"	127	4' 2"	127	4' 2"	127	4' 2"	127	
G—Height of Water Line SPH	4' 2"	127	4' 2"	127	4' 2"	127	4' 2"	127	4' 2"	127	
G—Height of Water Line SPL	4' 1"	124.5	4' 1"	124.5	4' 1"	124.5	4' 1"	124.5	N.A.	N.A.	
H—Overall Height—SPL, SPW (b)	5'	152.4	5'	152.4	5'	152.4	5'	152.4	N.A.	N.A.	
H—Overall Height—SPH (b)	4' 10"	147.3	4' 10"	147.3	4' 10"	147.3	4' 10"	147.3	4' 10"	147.3	
I—Floor to Burner	2' 10"	86.4	2' 10"	86.4	2' 10"	86.4	2' 10"	86.4	2' 10"	86.4	
J—Location Top Conn. SPH	2' 3"	68.6	2' 3"	68.6	2' 3"	68.6	2' 3"	68.6	2' 3"	68.6	
J—Location Top Conn. SPL	2' 4"	71.1	2' 4"	71.1	2' 4"	71.1	2' 4"	71.1	N.A.	N.A.	
J—Location Top Conn. SPW (a)	2' 4"	71.1	2' 4"	71.1	2' 4"	71.1	2' 4"	71.1	N.A.	N.A.	
K—Location Bottom Conn. SPL, SPW (a)	1'	30.5	1'	30.5	1'	30.5	1'	30.5	N.A.	N.A.	
L—Dist. Rear Tube Removal (e)	2' 6"	76.2	3' 2"	96.5	4' 9"	144.8	6' 4"	193	7' 11"	241.3	
M—Dist. Front Tube Removal (d) (e)	1' 10"	55.9	2' 7"	78.7	3' 1"	94	4' 8"	142.2	5' 11"	180.3	
N—Floor to Shell Height	4' 7"	139.7	4' 7"	139.7	4' 7"	139.7	4' 7"	139.7	4' 7"	139.7	
O—Burner Extension (d)	1' 7"	48.3	1' 7"	48.3	2' 7"	78.7	2' 7"	78.7	2' 9"	83.8	
P—Add. Boiler Length w/Vert. Vent.	1' 2"	35.6	1' 2"	35.6	1' 2"	35.6	1' 2"	35.6	1' 2"	35.6	
T—Location Blowdown Conn.	1' 1"	33	1' 1"	33	1' 1"	33	1' 1"	33	1' 1"	33	
Boiler I.D. Inches	42"	106.7	42"	106.7	42"	106.7	42"	106.7	42"	106.7	
Size Tube Inches	2"	5.1	2"	5.1	2"	5.1	2"	5.1	2"	5.1	
Bottom Shell to Floor Inches	12"	30.5	12"	30.5	12"	30.5	12"	30.5	12"	30.5	
Supply Sizes	SPL In. (cm)	6" (15.2)	6" (15.2)	6" (15.2)	6" (15.2)	6" (15.2)	6" (15.2)	6" (15.2)	N.A.	N.A.	
	PSI (KG/cm ²)	150 # Flg.	10.5	150 # Flg.	10.5	150 # Flg.	10.5	150 # Flg.	10.5	N.A.	N.A.
Top Connection	SPH In. (cm)	2" SCR.	2" SCR.	2" SCR.	2" SCR.	2" SCR.	2" SCR.	2" SCR.	2" SCR.	5.1	
	SPW (a) In. (cm)	3" (7.6)	3" (7.6)	3" (7.6)	3" (7.6)	3" (7.6)	3" (7.6)	3" (7.6)	3" (7.6)	N.A.	N.A.
Return Size	PSI (KG/cm ²)	150 # Flg.	10.5	150 # Flg.	10.5	150 # Flg.	10.5	150 # Flg.	10.5	N.A.	N.A.
	SPL In. (cm)	3" SCR.	7.6	3" SCR.	7.6	3" SCR.	7.6	3" SCR.	7.6	N.A.	N.A.
Bottom Connection	SPW (a) In. (cm)	3" SCR.	7.6	3" SCR.	7.6	3" SCR.	7.6	3" SCR.	7.6	N.A.	N.A.
	SPH & SPL	1 1/4" SCR.	3.2	1 1/4" SCR.	3.2	1 1/4" SCR.	3.2	1 1/4" SCR.	3.2	1 1/4" SCR.	3.2
Vent Size	Inches — (cm)	9 1/2" (24.8)	9 1/2" (24.8)	9 1/2" (24.8)	9 1/2" (24.8)	9 1/2" (24.8)	9 1/2" (24.8)	9 1/2" (24.8)	9 1/2" (24.8)	9 1/2" (24.8)	

PSI — KG/CM² (Kilograms / cm²)

(a) Water boilers reverse flow
(b) Clearance for Safety Valves
add 8" (20 cm)
Clearance for Optional Aqua-
Temp add 25" (64 cm)

(c) 560 Series Dimension Shown
is for oil fuel. Add
13" for gas or gas/oil fuel.

(d) 560 Series Dimension shown
is for oil fuel. Subtract
13" for gas or gas/oil fuel.
(e) Use front or rear tube
removal dimension, not both.

GROSS RATINGS CAPACITY

SERIES	542										
	25 HP	245 KW	30 HP	294 KW	40 HP	392 KW	50 HP	490 KW	60 HP	588 KW	
Approx. Boiler HP (KW)	25	245	30	294	40	392	50	490	60	588	
Steam Lbs. per Hr. (KG/hr)	862	392	1035	470	1380	627	1725	784	2070	941	
E.D.R. Sq. Ft. (Sq. Met.) Gross Steam	3485	323.8	4188	389.1	5583	518.7	6979	648.3	8375	778	
Gross Water	5580	518.4	6700	622.4	8933	829.9	11167	1037.4	13400	1244.9	
M.C.A. Net Load Rating Steam Sq.Ft.	2790	259.2	3348	311	4463	414.6	5579	518.3	6695	622	
M.B.T.U. (KCAL), Input per Hr.	1048	264.1	1250	315	1675	422.1	2095	528	2520	635	
M.B.T.U. (KCAL), Output per Hr.	837	210.9	1005	253.3	1340	337.7	1675	422.1	2009	506.3	
Heating Surface Square Feet (Sq. Met.)	Water Side	136	12.63	163	15.14	218	20.25	274	25.45	328	30.47
	Fire Side	125	11.61	150	13.94	200	18.58	250	23.23	300	27.87
Min. Safety Valve Cap SPL, SPW	Lb./Hr.(KG/Hr.)	1000	454	1200	545	1600	727	2000	909	N.A.	N.A.
Min. Safety Valve Cap SPH	Lb./Hr.	1005	456.8	1340	609.1	1675	766.4	2009	913.2	2678	1217.3
Dry Weight* Lbs. (KG)	SPL	2255	1025	2530	1150	3525	1602	4050	1841	N.A.	N.A.
	SPW										
	SPH	2400	1091	2755	1252	3935	1788	4640	2114	5350	2432
Wet Weight* Lbs. (KG)	SPL	3545	1611	4105	1866	5670	2577	6765	3075	N.A.	N.A.
	SPW	3870	1759	4380	1991	6045	2748	7240	3291	N.A.	N.A.
	SPH	3755	1707	4405	2002	6175	2807	7480	3400	8780	3991
Water Capacity Gallons - Liters	SPL	163	617	198	749	270	1022	342	1294	413	1563
	SPH										
	SPW	195	738	223	844	303	1147	385	1457	N.A.	N.A.

Steam ratings are from water at 212°F. to steam at 212°F. Standard pressures steam 15 PSI and 150 PSI, Water 30 PSI
 Steam ratings are from water 100°C. to steam at 100°C. Standard pressures steam 1.06 Kg/cm² and 10.55 Kg/cm², Water 2.12 Kg/cm²
 *Weights for Standard Light Oil Units

BURNER DATA

SERIES	542										
	25 HP	245 KW	30 HP	294 KW	40 HP	392 KW	50 HP	490 KW	60 HP	588 KW	
Input 1000 BTU Gas CFH (CMH)	1048	29.68	1250	35.4	1675	47.44	2095	59.33	2520	71.37	
Input 150 MBTU, Hvy. Oil GPH (LPH)	-	-	-	-	11.0	42.63	14.0	52.99	16.0	60.56	
Input 140 MBTU, Lt. Oil GPH (LPH)	7.5	28.39	9.0	34.07	12.0	45.4	15.0	56.78	17.0	64.35	
Oil Pump	Power Takeoff From Forced Draft Blower Motor										
Motor Size (HP)	Lt. Oil	-	-	-	-	1/4	.186	1/4	.186	1/4	.186
	Hvy. Oil	-	-	-	-	1/4	.186	1/4	.186	1/4	.186
Oil Pump	Lt. Oil	20	75.7	20	75.7	20	75.7	20	75.7	55	208.2
Capacity (GPH)	Hvy. Oil	-	-	-	-	100	378.5	100	378.5	100	378.5
Forced Draft Blower Motor HP, Lt. Oil/Hvy Oil (KW)	1/3/NA	.249/NA	1/3/NA	.249/NA	1/1	.746/.746	1/1½	.746/1.12	2/1½	1.49/1.12	
Forced Draft Blower (RPM)	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	
Forced Draft Blower CFM (CMM)	315	8.92	315	8.92	450	12.74	500	14.16	600	16.99	
Compressor Motor Size (HP) (KW)	Hvy. Oil Only	-	-	-	-	1	.746	1	.746	1	.746
St'd. Control Circuit Voltage	115	115	115	115	115	115	115	115	115	115	
St'd. Blower Motor Characteristics	1/115/60	1/115/60	1/115/60	1/115/60	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	
St'd. Comp. Motor Characteristics	-	-	-	-	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	
St'd. Oil Pump Motor Characteristics (Lt. Oil)	-	-	-	-	-	-	-	-	-	-	
St'd. Oil Pump Motor Characteristics (Hvy. Oil)	-	-	-	-	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	
Elec. Heater Size	# 6 Oil	SPW	-	-	-	3000	3000	3000	3000	N.A.	N.A.
		SPL & SPH	-	-	-	2000	2000	2000	2000	2000	2000
		# 5 Oil	-	-	-	1000	1000	2000	2000	2000	2000
Type Ignition	Lt. Oil	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Ejec.	Elec.	Elec.
	Other Fuels	Gas/ Elec.	Gas/ Elec.	Gas/ Elec.	Gas/ Elec.	Gas/ Elec.	Gas/ Elec.	Gas/ Elec.	Gas/ Elec.	Gas/ Elec.	Gas/ Elec.

LBS - KG (kilograms) M.B.T.U. - KCAL (kilocalories) NA - Not Available
 HP - KW (kilowatts) CFH - CMH (cubic meters/hr)
 LBS/hr - KG/hr GPH - LPH (liters/hr)
 Sq. Ft. - Sq. Met. (square meters) CFM - CMM (cubic meters/min)
 Cu. Ft. - Cu. Met. (cubic meters) PSI - KG/2 (kilograms/cm²)

United States Treasury

15-51
000 B 048,971,731



Pay to
the order of

06 06 86 03 BIRMINGHAM, AL.

A2186

02 NASA JFK

KENNEDY FL

Check No.

3506 59858855

80004904

STATE OF FLORIDA
DEPT OF ENVIRONMENTAL
REGULATIONS

PERMIT AIR POLLUTION
SOURCES

\$****300*00

048
Fred P. Carter
TREASURY DEPARTMENT OFFICE

⑈ 35068 ⑈

⑆000000518⑆ 598588551⑈

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

No. 76126

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from

United States Treasury

Date

June 18, 1986

Address

Dollars \$

300.00

Applicant Name & Address

Kennedy Space Center, NASA

Source of Revenue

Revenue Code

001031

Application Number

AC 05-121639, 121640, 121641

By

Patricia A. Adams

John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

JUN 13 1986

Reply to Attn of

DF-EMS

DER

JUN 18 1986

BAQM

Dept. of Environmental Regulation
Attn: Mr. Clair H. Fancy, Deputy Chief,
Bureau of Air Quality
2600 Blair Stone Road
Tallahassee, FL 32301


Subject: Construction Permit Applications for New Air Pollution
Sources at Kennedy Space Center

Enclosed are permit applications for the following sources:

- a. Two hot water boilers for Hangars AO and AM.
- b. One steam generator for Hangar L.

Also enclosed is a check for \$300 to cover the application fees
for the three permits.

All questions concerning these permits should be addressed to Mr.
Mario Busacca at 305 867-4049.



James D. Phillips
Director of Engineering Development

Enclosures

#1 AC 05-121640
#2 AC 05-121641

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
DER

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



BOB GRAHAM
GOVERNOR
JUN 18 1986
VICTORIA J. TSCHINKEL
SECRETARY

BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Hot Water Generator [] New¹ [] Existing¹

APPLICATION TYPE: [] Construction [] Operation [] Modification

COMPANY NAME: National Aeronautics and Space Administration COUNTY: Brevard

Identify the specific emission point source(s) addressed in this application (i.e. Line No. 2 Oil Fired Hot Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Water Generators # 1 and #2 Cape Canaveral

SOURCE LOCATION: Street Hangars AO and AM City Air Force Station

UTM: East 5 40 653 North 31 51 480

Latitude 28 ° 29 ' 33 "N Longitude 80 ° 34 ' 54 "W

APPLICANT NAME AND TITLE: James D. Phillips, Director of Engineering Development

APPLICANT ADDRESS: John F. Kennedy Space Center, Kennedy Space Center, FL 32899

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

National Aeronautics and
Space Administration

I am the undersigned owner or authorized representative* of Space Administration

I certify that the statements made in this application for a Construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: James D. Phillips
James D. Phillips, Director of Engineering Development
Name and Title (Please Type) ment
Date: 6-13-86 Telephone No. (305) 867-2565

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Exempt per 17-4.05(3)

Signed James D. Phillips
James D. Phillips

Name (Please Type)

National Aeronautics and Space Administration

Company Name (Please Type)

Kennedy Space Center, FL 32899

Mailing Address (Please Type)

Florida Registration No. _____ Date: 6-13-86 Telephone No. (305) 867-2565

SECTION II: GENERAL PROJECT INFORMATION

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Construct two 1.88 MMBTU/hr hot water generators for heating and humidity control at Hangars AO and AM on CCAFS. Hot water generators will be operated parallel with one boiler operating full time and the second operating as demand requires.

- B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction August 1986 Completion of Construction September 1986

- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

N/A

- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

E. Requested permitted equipment operating time: hrs/day 18 ; days/wk 7 ; wks/yr 52 ;
if power plant, hrs/yr _____ ; if seasonal, describe: _____

F. If this is a new source or major modification, answer the following questions.
(Yes or No)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------|
| 1. Is this source in a non-attainment area for a particular pollutant? | <u>No</u> |
| a. If yes, has "offset" been applied? | <u>-</u> |
| b. If yes, has "Lowest Achievable Emission Rate" been applied? | <u>-</u> |
| c. If yes, list non-attainment pollutants. | <u>-</u> |
| 2. Does best available control technology (BACT) apply to this source?
If yes, see Section VI. | <u>N/A</u> |
| 3. Does the State "Prevention of Significant Deterioration" (PSD)
requirement apply to this source? If yes, see Sections VI and VII. | <u>N/A</u> |
| 4. Do "Standards of Performance for New Stationary Sources" (NSPS)
apply to this source? | <u>N/A</u> |
| 5. Do "National Emission Standards for Hazardous Air Pollutants"
(NESHAP) apply to this source? | <u>N/A</u> |
| H. Do "Reasonably Available Control Technology" (RACT) requirements apply
to this source? | <u>N/A</u> |
| a. If yes, for what pollutants? | _____ |
| b. If yes, in addition to the information required in this form,
any information requested in Rule 17-2.650 must be submitted. | |

Attach all supportive information related to any answer of "Yes". Attach any justifi-
cation for any answer of "No" that might be considered questionable.

D. Control Devices: (See Section V, Item 4) N/A

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 2 Fuel Oil	13.6 gal./hr	13.6 gal./hr	1.88

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: 0.5 Percent Ash: 0.006
 Density: 7.080 lbs/gal Typical Percent Nitrogen: -
 Heat Capacity: 19,568 BTU/lb 138,541 BTU/gal
 Other Fuel Contaminants (which may cause air pollution): -

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average 20 Maximum 40

G. Indicate liquid or solid wastes generated and method of disposal.

None

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
N/A
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
N/A
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
N/A
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
N/A
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes No

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____
_____	_____

- B. Has EPA declared the best available control technology for this class of sources (if yes, attach copy)

Yes No

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____
_____	_____

- C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
_____	_____
_____	_____
_____	_____
_____	_____

- D. Describe the existing control and treatment technology (if any).

- | | |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:* | 4. Capital Costs: |

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height:

ft.

b. Diameter:

ft.

c. Flow Rate:

ACFM

d. Temperature:

°F.

e. Velocity:

FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:¹

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:²

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

¹ Explain method of determining efficiency.

Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

10. Reason for selection and description of systems:

¹Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION N/A

A. Company Monitored Data

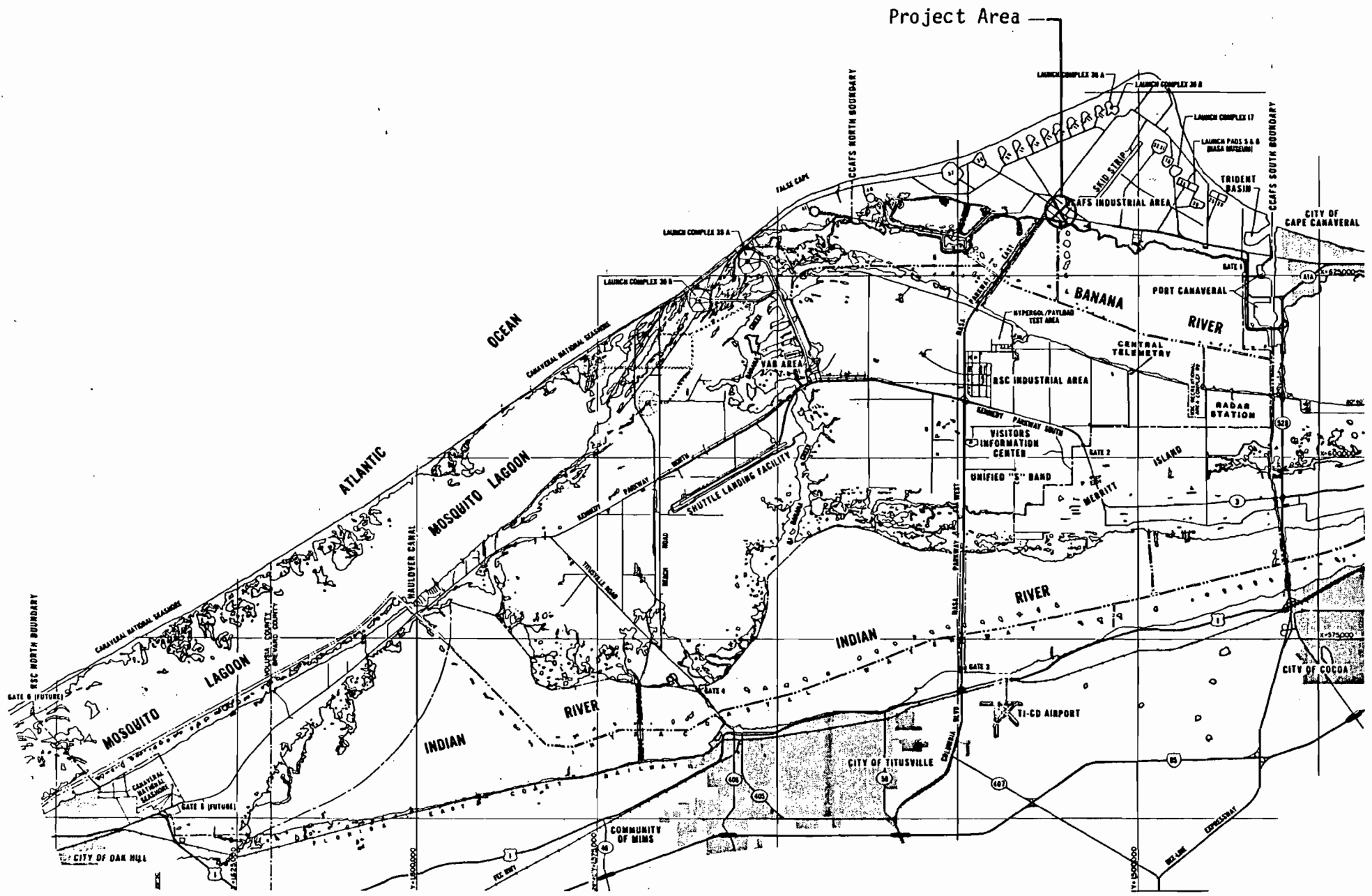
1. _____ no. sites _____ TSP _____ () SO₂ _____ Wind spd/dir

Period of Monitoring _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).



JOHN F. KENNEDY SPACE CENTER AND CAPE CANAVERAL AIR FORCE STATION

Figure 1: Project Area for Hangar AO & AM Hot Water Generators 1 & 2

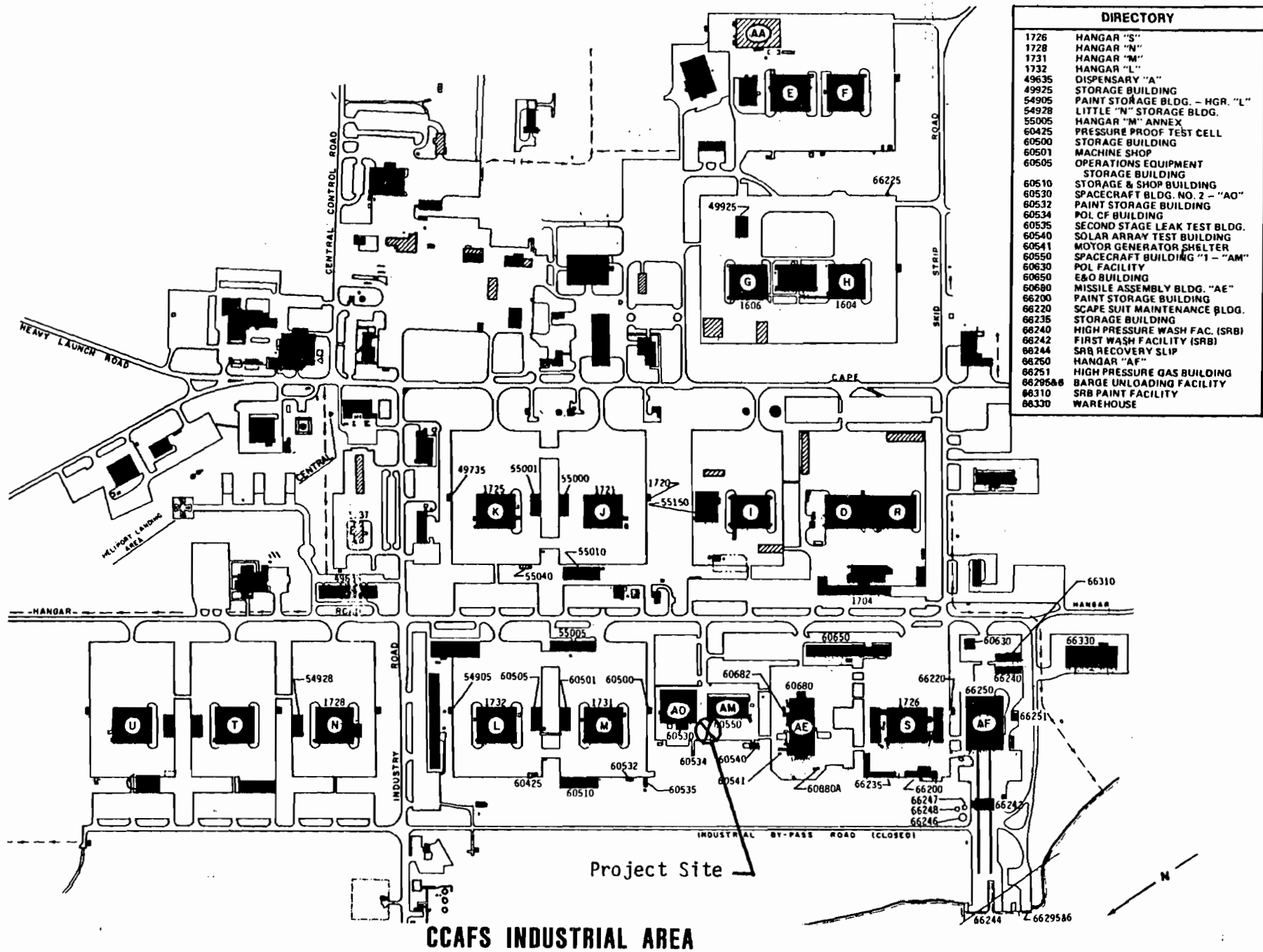


Figure 2: Project Site for Hangar AO & AM Hot Water Generators 1 & 2

CALCULATIONS

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Potential - Maximum EmissionsMax Heat Input = 1.88×10^6 Btu/hr

Operating hours = 6552 hrs

No. 2 Fuel Oil: SO₂ 0.5% sulfur by weight max.

from fuel analysis 138,541 Btu/hr

Fuel Usage = 1.88×10^6 Btu/hr / 138,541 Btu/gal = 13.6 gal/hrEmissions (1)SO₂: 142 lb/1000 gal = 142(0.5) = 71 lb/1000 gal S $(71 \text{ lb/1000 gal}) (13.6 \text{ gal/hr}) = 0.96 \text{ lb/hr}$ $= 6290 \text{ lb/yr} = 3.1 \text{ tons/yr}$

CO: (5 lb/1000 gal) (13.6 gal/hr) = 0.068 lb/hr

 $= 458.6 \text{ lb/yr} = 0.2 \text{ tons/yr}$ NO_x: (22 lb/1000 gal) (13.6 gal/hr) = 0.3 lb/hr $= 1966 \text{ lb/yr} = 1.0 \text{ tons/yr}$

Part.: (2 lb/1000 gal)(13.6 gal/hr) = 0.03 lb/hr

 $= 196 \text{ lb/yr} = 0.1 \text{ tons/yr}$

(1) Reference EPA "Compilation of Air Pollutant Emission Factors" AP-42.

Potential - Maximum Emissions

Max Heat Input = 1.88×10^6 Btu/hr

Operating hours = 6552 hrs

No. 2 Fuel Oil: SO₂ 0.5% sulfur by weight max.

from fuel analysis 138,541 Btu/hr

Fuel Useage = 1.88×10^6 Btu/hr / 138,541 Btu/gal = 13.6 gal/hr

Emissions (1)

SO₂: 142 S lb/1000 gal = 142(0.5) = 71 lb/1000 gal S
 (71 lb/1000 gal) (13.6 gal/hr) = 0.96 lb/hr
 = 6290 lb/yr = 3.1 tons/yr

CO: (5 lb/1000 gal) (13.6 gal/hr) = 0.068 lb/hr
 = 458.6 lb/yr = 0.2 tons/yr

NO_x: (22 lb/1000 gal) (13.6 gal/hr) = 0.3 lb/hr
 = 1966 lb/yr = 1.0 tons/yr

Part.: (2 lb/1000 gal)(13.6 gal/hr) = 0.03 lb/hr
 = 196 lb/yr = 0.1 tons/yr

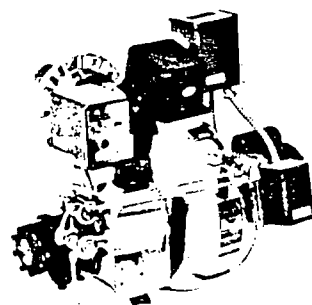
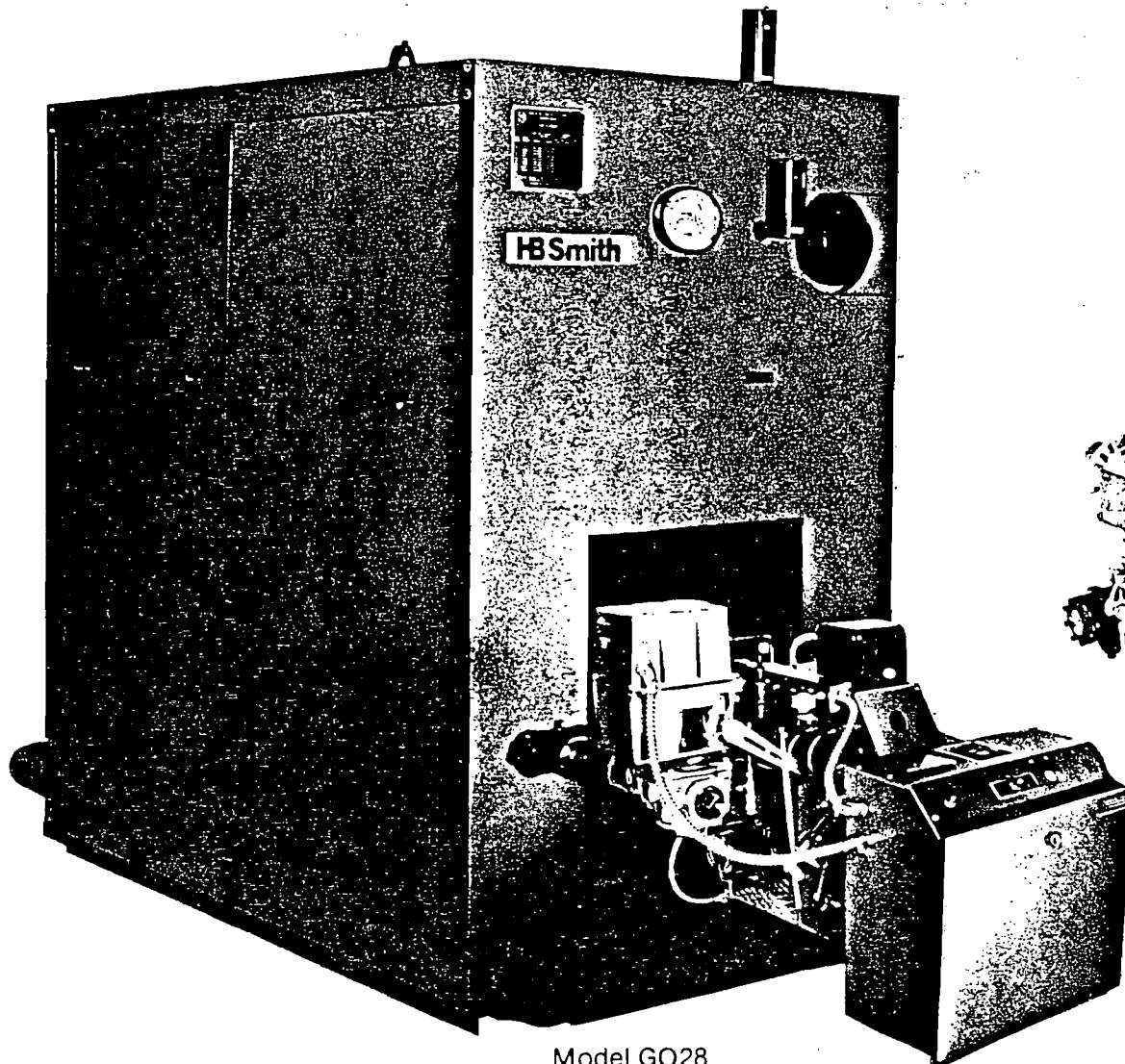
(1) Reference EPA "Compilation of Air Pollutant Emission Factors" AP-42.

Smith

28

Warming America Since 1853

**PRESSURIZED,
WET-BASE
BOILER/BURNER**



Carlin light oil
(No. 2) burner

Model GO28
Power Flame Combination gas/oil burner

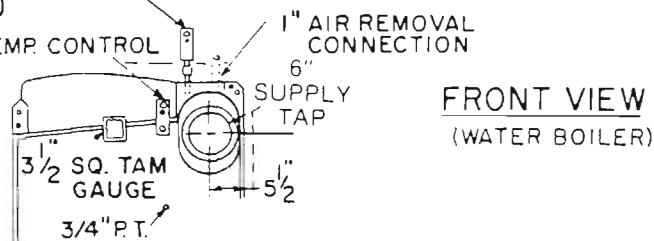
LIGHT OIL, GAS, OR GAS/LIGHT OIL. I = B = R RATINGS GROSS OUTPUT 798 to 4.630 MBH

MODEL 28 PF

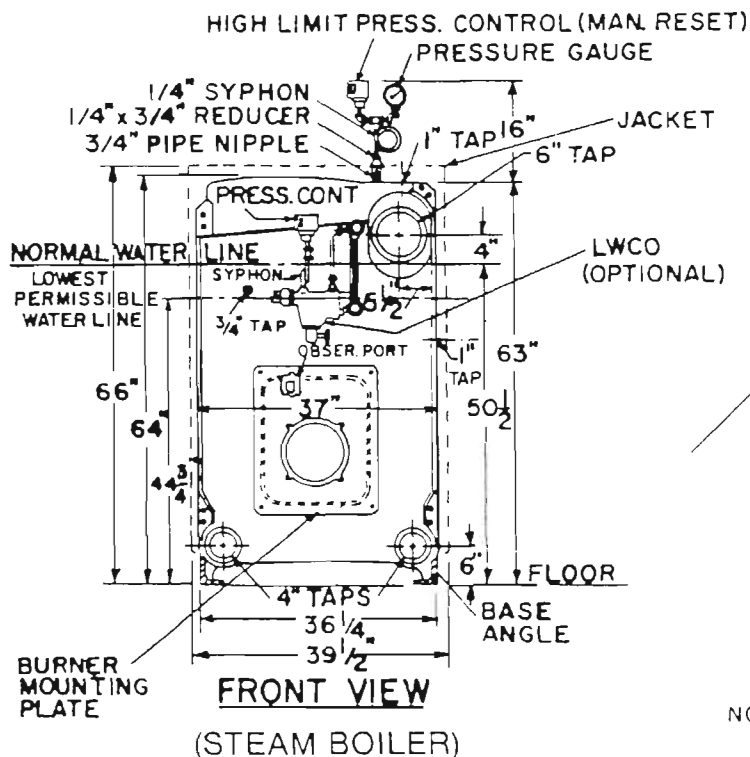
**LIGHT OIL, GAS, or
GAS/LIGHT OIL**

**I = B = R RATINGS: GROSS OUTPUT
798 to 4,630 MBH**

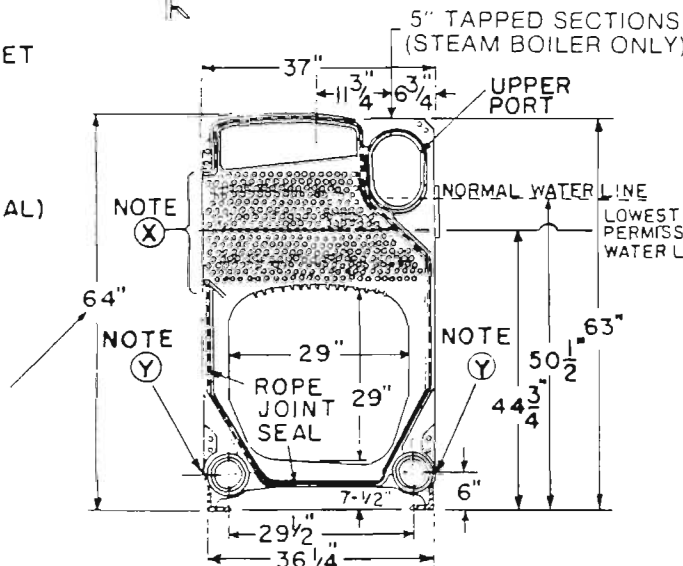
HIGH TEMP. LIMIT CONTROL
(MAN. RESET)
OPERATING TEMP. CONTROL



**FRONT VIEW
(WATER BOILER)**



**FRONT VIEW
(STEAM BOILER)**



INTERMEDIATE SECTION

- NOTE X - FLUE CLEANOUT OPENING. ALLOW 36" CLEAR WORK SPACE FOR USING FLUE BRUSH.
- NOTE Y - 1/2" INSPECTION TAPPINGS WHEN ORDERED.
- NOTE Z - TANKLESS HEATER SECTIONS WHEN ORDERED. ALLOW 36" CLEAR SPACE FOR HEATER WITHDRAWAL.

Model 28 PF and Dimensions (continued)

Boiler Number (Note 1)	Boiler Horse-Power	I=B=R Gross Output (MBH)	Net I=B=R Ratings (Note 2)		I=B=R Burner Capacity		Heating Surface (Sq. ft.)	Furnace Volume (Cu. ft.)	Water Contents (Gals.)		Water Working Weight (Lbs.)	OVERALL LENGTH—"A" (Note 8)		
			Sq. ft.	MBH	Oil GPH (Note 3)	Gas MBH (Note 4)			Steam	Water		Carlin	Power Flame	
†28-Δ-4	24	798	2,495	599.6	693.3	7.0	1,010	81.2	12.04	103.8	123.4	4.215	63 7/16	72 3/16
†28-Δ-5	31	1,054	3,295	790.7	916.5	9.2	1,328	105.3	16.14	125.8	150.3	5.038	71 1/2	84 3/4
†28-Δ-6	39	1,310	4,115	987.2	1,139.1	11.4	1,645	129.4	20.24	147.8	177.2	5.861	81 7/16	92 7/16
AC/AM (2 RECD) †28-Δ-7	47	1,566	5,000	1,200.0	1,361.7	13.6	1,963	153.5	24.34	169.8	204.1	6.684	89 1/2	100 1/2
†28-Δ-8	54	1,820	5,875	1,409.8	1,582.6	15.8	2,280	177.6	28.44	191.8	231.0	7.507	97 9/16	108 9/16
†28-Δ-9	62	2,076	6,715	1,611.8	1,805.2	18.2	2,627	201.7	32.54	213.8	257.9	8.331	105 5/8	116 3/8
†28-Δ-10	70	2,332	7,545	1,810.6	2,027.8	20.5	2,959	225.8	36.64	235.8	284.8	9.169	118 7/16	124 11/16
†28-Δ-11	77	2,584	8,360	2,006.2	2,247.0	22.5	3,247	249.9	40.74	257.8	311.7	9.992	126 1/2	138 3/4
†28-Δ-12	85	2,840	9,185	2,205.0	2,469.6	25.0	3,608	274.0	44.84	279.8	338.6	10.815	134 9/16	146 9/16
†28-Δ-13	92	3,096	10,015	2,403.7	2,692.2	27.0	3,897	298.1	48.94	301.8	365.5	11.649	142 3/8	154 7/8
†28-Δ-14	100	3,370	10,902	2,616.5	2,930.4	29.5	4,258	322.2	53.04	323.8	392.4	12.467	150 9/16	162 9/16
†28-Δ-15	111	3,690	11,937	2,864.9	3,208.7	32.5	4,579	346.3	57.14	345.8	419.3	13.511	—	171
†28-Δ-16	119	4,000	12,940	3,105.6	3,478.3	35.0	4,963	370.4	61.24	367.8	446.2	14.375	—	179 7/16
†28-Δ-17	130	4,310	13,943	3,346.3	3,747.8	38.0	5,423	394.5	65.34	389.8	473.1	15.239	—	187 3/8
†28-Δ-18	138	4,630	14,978	3,594.7	4,026.1	40.5	5,816	418.6	69.44	411.8	500.0	16.103	—	195 3/8

(Note 1) Important Ordering Information

(†) Add prefix for type of fuel to be burned: "LO" for light oil, "G" for gas, or "GO" for gas/oil

(Δ) Insert "S" for steam, "W" for water

Example: LO-28-S-6 is the Model Number for a six section steam boiler firing light oil

(Note 2) Net I=B=R Water Ratings are based on an allowance of 1.15. Net I=B=R Ratings for steam boilers are based on piping and pickup factor as follows: 4 and 5 section—1.333, 6 section—1.327, 7 section—1.305, 8 section and larger—1.288

(Note 3) Light oil having a heat content of 140,000 BTU

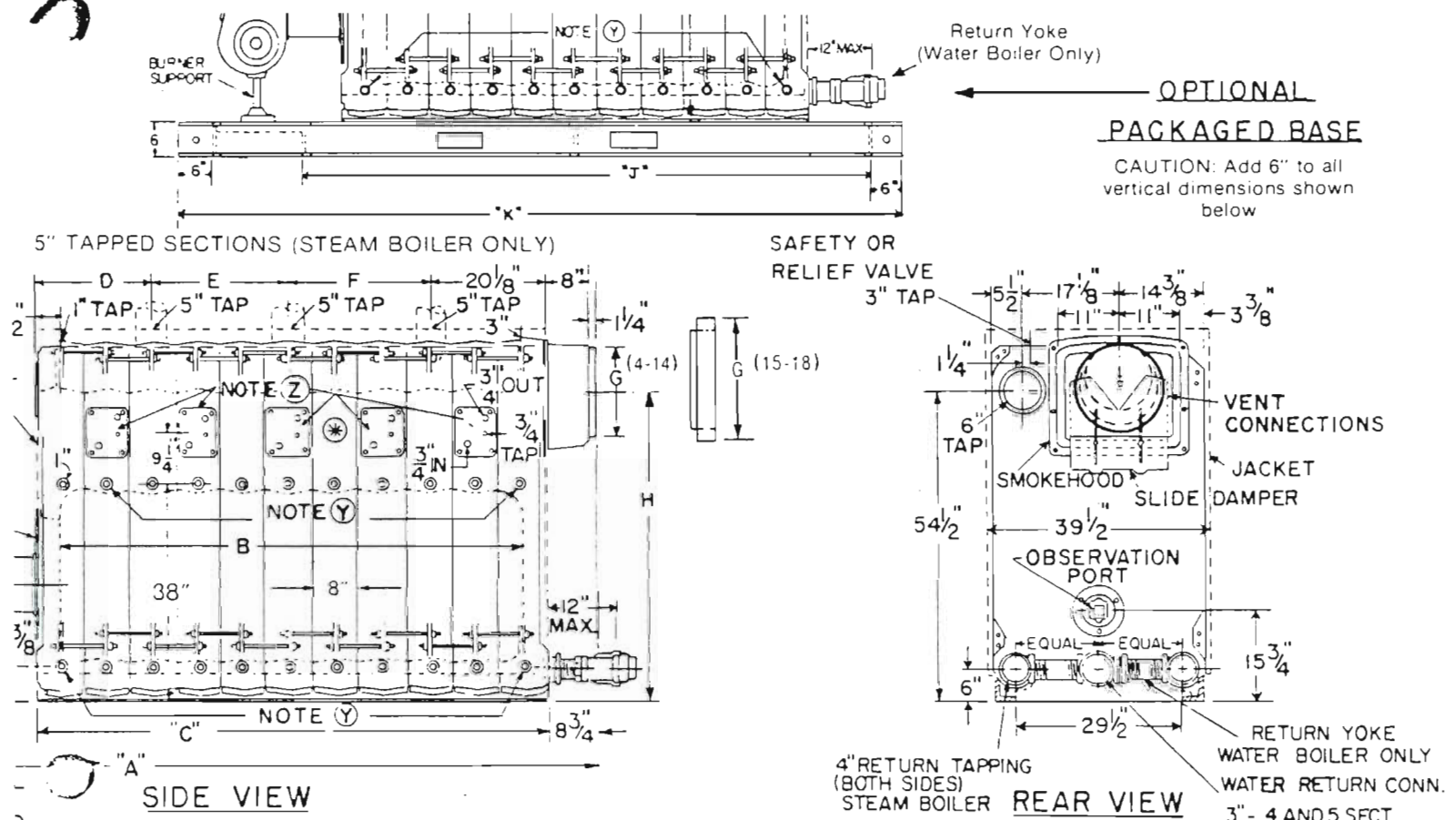
(Note 4) Gas having a heat content of 1,000 BTU Cu. ft.

(Note 5) Burner operation: Low-fire start, high-fire start

(Note 6) Burner operation: On-Off (4 section) Low-fire start

(Note 7) When unit is packaged, add 6" to all heights

PRESURIZED WET-BASE BOILER



IF FIFTH HEATER IS REQUIRED IN AN 11 SECTION BOILER RELOCATE MIDDLE TAPPED SECTION INDICATED ABOVE AND INSERT FIFTH HEATER SECTION IN ITS PLACE.

Opt. Packaged Base Dimensions				Furnace Length "B"	Boiler Length "C"	Steam Uptake Locations			Draft Loss Ins. W.C.	Firebox Press. Ins. W.C.††	Dia. Vent Conn. "G"	(Note 7) Height Vent Conn. "H"	Boiler Number (Note 1)
Carlin "J"	Power "K"	Flame "J"	Flame "K"			"D"	"E"	"F"					
54 1/2	83 1/2	54 1/2	91 1/2	23 1/2	34 1/16	12 1/16	—	—	13	23	10	57 1/2	†28-Δ-4
62 1/2	91 1/2	62 1/2	104 1/2	31 1/2	42 1/4	20 1/8	—	—	13	23	10	57 1/2	†28-Δ-5
70 3/8	99 1/2	70 3/8	112 1/16	39 3/8	50 1/16	12 2/16	16 1/8	—	13	23	12	56 3/8	†28-Δ-6
78 3/8	107 1/2	78 3/8	120 3/8	47 1/16	58 3/8	12 1/16	24 1/16	—	13	23	12	56 3/8	†28-Δ-7
86 7/8	115 1/2	86 7/8	128 7/8	55 3/4	66 1/16	12 1/16	32 1/2	—	14	24	14	55 3/8	†28-Δ-8
96 1/2	123 1/2	94 1/2	136 1/2	63 3/16	74 1/2	12 1/16	40 1/16	—	14	24	14	55 3/8	†28-Δ-9
102 1/16	135 1/2	102 1/16	144 1/16	71 7/8	82 1/16	20 1/8	40 1/16	—	15	25	14	55 3/8	†28-Δ-10
110 1/8	143 1/2	110 1/8	152 1/8	79 1/16	90 1/8	20 1/8	24 1/16	24 1/16	16	26	14	55 3/8	†28-Δ-11
118 1/4	151 1/2	118 1/4	165 1/4	88	98 1/16	20 1/8	24 1/16	32 1/2	16	26	16	54 3/8	†28-Δ-12
126 1/2	159 1/2	126 1/2	173 1/2	96 1/16	106 1/4	20 1/8	32 1/2	32 1/2	17	27	16	54 3/8	†28-Δ-13
134 1/4	167 1/2	134 1/4	181 1/4	104 1/8	114 1/16	20 1/8	32 1/2	40 1/16	17	27	16	54 3/8	†28-Δ-14
—	—	142 1/4	189 1/4	112 1/16	122 7/8	20 1/8	40 1/16	40 1/16	23	33	18	54 3/8	†28-Δ-15
—	—	150 1/2	197 1/16	120 1/4	130 1/16	20 1/8	48 3/8	40 1/16	28	38	18	54 3/8	†28-Δ-16
—	—	159	206	128 1/16	139	20 1/8	48 3/8	48 3/8	34	44	18	54 3/8	†28-Δ-17
—	—	167 1/2	214 1/16	136 3/8	147 1/16	20 1/8	57 1/16	48 3/8	39	49	20	54 3/8	†28-Δ-18

(Note 8) Add 2 1/2" to sect 15 thru 18 for smoke hood adapter
 ††Based on 0.10 ins. W.C. pressure at boiler outlet. If vent sizing results in a back pressure greater than 0.10 ins. W.C. consult The H. B. Smith Co.

50 specific gravity.
 no-position air.
 7-line-in. two position air (5-14 sect.)
 ensions "E" = 32" and "F" = 16"

The H. B. Smith representative should be consulted before selecting boilers for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping systems, etc. The boiler ratings have been determined under the provisions governing forced draft units.

A-BURNER

BEST AVAILABLE COPY

TANKLESS DOMESTIC WATER HEATERS

Model No.	Capacity, Gals. min. 200° boiler water†	Pressure Drop-PSI	Inlet and Outlet Tappings
SM8-28	8.0	13.0	¾"

† Intermittent draw 100° F average temperature rise.

Boiler Number	Maximum No. of heaters	Location by boiler section† (Heaters install from right side)
28-4	1	F-T-Ⓜ-B
28-5	2	F-Ⓜ-T-Ⓜ-B
28-6	2	F-T-Ⓜ-T-Ⓜ-B
28-7	2	F-T-Ⓜ-P-T-Ⓜ-B
28-8	3	F-T-Ⓜ-P-Ⓜ-T-Ⓜ-B
28-9	3	F-T-Ⓜ-P-Ⓜ-P-T-Ⓜ-B
28-10	4	F-Ⓜ-T-Ⓜ-P-Ⓜ-P-T-Ⓜ-B
28-11	5	F-Ⓜ-T-Ⓜ-P-T-Ⓜ-Ⓜ-T-Ⓜ-B
28-12	5	F-Ⓜ-T-Ⓜ-P-T-Ⓜ-P-Ⓜ-T-Ⓜ-B
28-13	6	F-Ⓜ-T-Ⓜ-P-Ⓜ-T-Ⓜ-P-Ⓜ-T-Ⓜ-B
28-14	6	F-Ⓜ-T-Ⓜ-P-Ⓜ-T-Ⓜ-P-Ⓜ-P-T-Ⓜ-B
28-15	6	F-Ⓜ-T-Ⓜ-P-Ⓜ-P-T-Ⓜ-P-Ⓜ-P-T-Ⓜ-B
28-16	7	F-Ⓜ-T-Ⓜ-P-Ⓜ-P-Ⓜ-T-Ⓜ-P-Ⓜ-P-T-Ⓜ-B
28-17	8	F-Ⓜ-T-Ⓜ-P-Ⓜ-P-Ⓜ-T-Ⓜ-P-Ⓜ-P-Ⓜ-T-Ⓜ-B
28-18	8	F-Ⓜ-T-Ⓜ-P-Ⓜ-P-Ⓜ-P-T-Ⓜ-P-Ⓜ-P-Ⓜ-T-Ⓜ-B

F = Front section, T = Intermediate section with 5 inch steam tapping, Ⓜ = Intermediate section with side heater opening, P = Plain intermediate section, B = Back section

* If fifth heater is required, relocate middle tapped section to this location and insert fifth heater section in its place.

† Furnished with steam boilers only

Model No.	Minimum boiler sections	Capacity, Gals./min. 200° boiler water†
Screw-in heater		
L34	4	5.33
L44	4	5.33
L45	4	6.66
L56	4	8.0
L67	4	9.33
L78	4	10.67
L89	5	12.00
L910	5	13.33
L1011	5	14.66
L1112	5	16.00
Flange heater		
SH-1	4	4.66
SH-2	4	5.66
SH-3	4	7.00
SH-4	4	8.66
SH-5	4	10.83
SH-6	4	12.00
SH-7	5	13.33
SH-8	6	14.66
SH-9	7	16.00
SH-10	7	18.00
SH-11	8	20.00
SH-12	8	22.00
SH-13	9	24.00
SH-14	9	26.00
SH-15	9	28.00
SH-16	9	30.00
SH-17	12	32.00
SH-18	13	34.00
SH-19	14	36.00
SH-20	15	38.00
SH-21	16	40.00

† Intermittent draw 100° F average temperature rise.

BOILER SPECIFICATIONS

Boiler Number (Note 1)	BURNERS—LIGHT OIL				BURNERS—GAS		BURNERS—GAS-OIL	
	Carlin (Note 5)		Power Flame (Note 6)		Power Flame (Note 6)		Power Flame (Note 6)	
	Model No.	H.P.	Model No.	H.P.	Model No.	H.P.	Model No.	H.P.
†28-Δ-4	701CRD	½	C1-0	½	C1-G-12	½	C1-GO-12	½
†28-Δ-5	701CRD	½	C2-0A	¾	C2-G-15	½	C2-GO-15	¾
†28-Δ-6	501CRD	¾	C2-0A	¾	C2-G-15	½	C2-GO-15	¾
†28-Δ-7	501CRD	¾	C2-0A	¾	C2-G-15	½	C2-GO-15	¾
†28-Δ-8	501CRD	¾	C2-0B	1	C2-G-20A	¾	C2-GO-20A	1
†28-Δ-9	501CRD	¾	C2-0B	1	C2-G-20B	¾	C2-GO-20B	1
†28-Δ-10	705OFFD	1	C2-0B1	1	C2-G-20B1	¾	C2-GO-20B	1
†28-Δ-11	705OFFD	1	C3-0	2	C3-G-20	1½	C3-GO-20	2
†28-Δ-12	1150FFD	1½	C3-0	2	C3-G-20	1½	C3-GO-20	2
†28-Δ-13	1150FFD	1½	C3-0	2	C3-G-25	1½	C3-GO-25	2
†28-Δ-14	1150FFD	1½	C3-0	2	C3-G-25	1½	C3-GO-25	2
†28-Δ-15	—	—	C3-0B	3	C3-G-25B	2	C3-GO-25B	3
†28-Δ-16	—	—	C3-0B	3	C3-G-25B	2	C3-GO-25B	3
†28-Δ-17	—	—	C3-0B	3	C3-G-25B	2	C3-GO-25B	3
†28-Δ-18	—	—	C4-0A	3	C4-G-25	2	C4-GO-25M	3

Note: Low-High-Low or Modulation Firing consult H. B. Smith Co.

PRESSURIZED, WET-BASE BOILER BURNER

STANDARD EQUIPMENT

ALL BOILERS

- Cast-iron wet base sections
- Insulated metal jacket
- Cast-iron smokehood with integral damper
- Burner mounting plate with insulation block

- Front and rear flame observation ports
- Steel angle floor rails
- Ceramic fiber rope seal between sections
- Hi-Temp Hydronic port seals
- Flue brush

WATER BOILERS

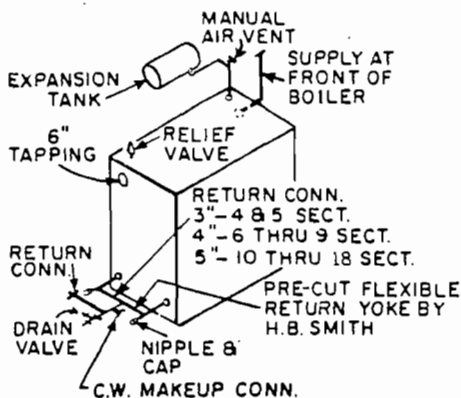
- ASME relief valve, 40 psi
- Theraltimeter
- Return yoke with flexible seals
- Manual reset, Hi-Limit control
- Lo-Limit control

STEAM BOILERS

- ASME side outlet safety valve, 15 psi
- Steam gauge
- Gauge glass with gauge cocks and guards
- Manual reset, Hi-Limit control
- Lo-Limit control

OPTIONAL EQUIPMENT

- Combination low water cutoff and feeder
- Tankless heaters
- Tankless heater sections, with cover plate
- Assembled sections
- Inspection tappings, 1 1/2 inch, 3 per section
- Factory start-up
- 80 psi H.T. sections — (water only)
- Barometric damper
 - 10 inch for 4 and 5 sections
 - 12 inch for 6 and 7 sections
 - 14 inch for 8-11 sections
 - 16 inch for 12-14 sections
 - 18 inch for 15-17 sections
 - 20 inch for 18 sections
- Packaged-fired tested (See note 7 Page 3)



ACCEPTABLE WATER BOILER PIPING

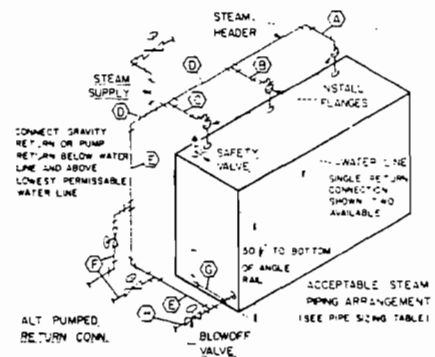


TABLE OF STEAM PIPING SIZES

NO. OF SECT.	RISERS "A"	RISERS "B"	RISERS "C"	HEADER "D"	RETURN CONN. GRAVITY "E"	RETURN CONN. PUMPED "E"	PUMP DISCH. PIPE "F"
4 & 5	5"	—	—	5"	2 1/2"	2 1/2"	3/4"
6 & 7	5"	—	—	5"	2 1/2"	2 1/2"	1"
8 - 10	5"	—	5"	6"	4"	2 1/2"	1 1/4"
11 - 18	5"	5"	5"	8"	4"	4"	1 1/2"

"G" = MANUAL AND AUTOMATIC WATER FEED CONNECTION.
 PUMP DISCHARGE SIZE BASED ON 15 PSI STEAM PRESSURE AND 20 PSI FEED PUMP DISCHARGE PRESSURE AND FEED VALVE IN BOILER CONNECTION. PIPE SIZE REDUCTIONS ARE POSSIBLE, CONSULT H.B. SMITH.
 FOR MULTIPLE BOILER INSTALLATIONS ADDITIONAL CONTROLS MAY BE REQUIRED TO PROVIDE PROPER WATER LEVEL CONTROLS FOR ALL BOILERS. CONSULT H.B. SMITH.

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AC 05-121439

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

JUN 18 1986

BAQM

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Steam Generator [] New¹ [] Existing¹

APPLICATION TYPE: [] Construction [] Operation [] Modification

COMPANY NAME: National Aeronautics and Space Administration COUNTY: Brevard

Identify the specific emission point source(s) addressed in this application (i.e. Line No. 2 Oil Fired Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Steam Generator

SOURCE LOCATION: Street Hangar L City CCAFS

UTM: East 5 40 653 North 31 51 480

Latitude 28 ° 29 ' 33 "N Longitude 80 ° 34 ' 54 "W

APPLICANT NAME AND TITLE: James D. Phillips, Director of Engineering Development

APPLICANT ADDRESS: John F. Kennedy Space Center, FL 32899

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of National Aeronautics and Space Administration

I certify that the statements made in this application for a Construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: James D. Phillips

James D. Phillips, Director of Engineering Development
Name and Title (Please Type) ment

Date: 6-13-86 Telephone No. (305) 867-2565

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

See Florida Administrative Code Rule 17-2.100(57) and (104)

DER Form 17-1.202(1)

Effective October 31, 1982

Page 1 of 12

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Exempt per 17-4.05(3)

Signed James D. Phillips

James D. Phillips

Name (Please Type)

National Aeronautics and Space Administration

Company Name (Please Type)

Kennedy Space Center, FL 32899

Mailing Address (Please Type)

Florida Registration No. _____ Date: 6-13-82 Telephone No. (305) 867-2565

SECTION II: GENERAL PROJECT INFORMATION

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

A single 2.1 MMBTU/hr input steam generator is to be constructed to provide temperature control and Autoclave steam for the Hangar L Facility.

- B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction August 1986 Completion of Construction September 1986

- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

N/A

- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

E. Requested permitted equipment operating time: hrs/day 11; days/wk 7; wks/yr 52; if power plant, hrs/yr _____; if seasonal, describe: _____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
a. If yes, has "offset" been applied? -
b. If yes, has "Lowest Achievable Emission Rate" been applied? -
c. If yes, list non-attainment pollutants. -

2. Does best available control technology (BACT) apply to this source? N/A
If yes, see Section VI.

3. Does the State "Prevention of Significant Deterioration" (PSD) requirement apply to this source? If yes, see Sections VI and VII. N/A

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? N/A

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? N/A

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? N/A

a. If yes, for what pollutants? _____

b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: N/A

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): N/A

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission ¹		Allowed Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
SO ₂	1.1				4404	2.2	
CO	0.075				300	0.15	
NOX	0.33				1321	0.7	
Part	0.03				120	0.06	

¹See Section V, Item 2.

²Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

⁴Emission, if source operated without control (See Section V, Item 3).

J. Control Devices: (See Section V, Item 4) N/A.

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 2 Fuel Oil	15 gal./hr	15 gal./hr	2.1

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: 0.5 Percent Ash: 0.006
 Density: 7.080 lbs/gal Typical Percent Nitrogen: -
 Heat Capacity: 19,568 BTU/lb 138,541 BTU/gal
 Other Fuel Contaminants (which may cause air pollution): -

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average 50 Maximum 70

G. Indicate liquid or solid wastes generated and method of disposal.

None

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 10 ft. Stack Diameter: 0.83 ft.
 Gas Flow Rate: 2700 ACFM - - DSCFM Gas Exit Temperature: 463 °F.
 Water Vapor Content: 6.5 % Velocity: - FPS

SECTION IV: INCINERATOR INFORMATION N/A

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: Cyclone Wet Scrubber Afterburner
 Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY N/A

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes No

Contaminant	Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes No

Contaminant	Rate or Concentration

- C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

- D. Describe the existing control and treatment technology (if any).

- | | |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:* | 4. Capital Costs: |

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height:

ft.

b. Diameter:

ft.

c. Flow Rate:

ACFM

d. Temperature:

°F.

e. Velocity:

FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:¹

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:²

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

¹ Explain method of determining efficiency.

Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

10. Reason for selection and description of systems:

¹Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION N/A

A. Company Monitored Data

1. _____ no. sites _____ TSP _____ () SO₂+ _____ Wind spd/dir

Period of Monitoring _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).

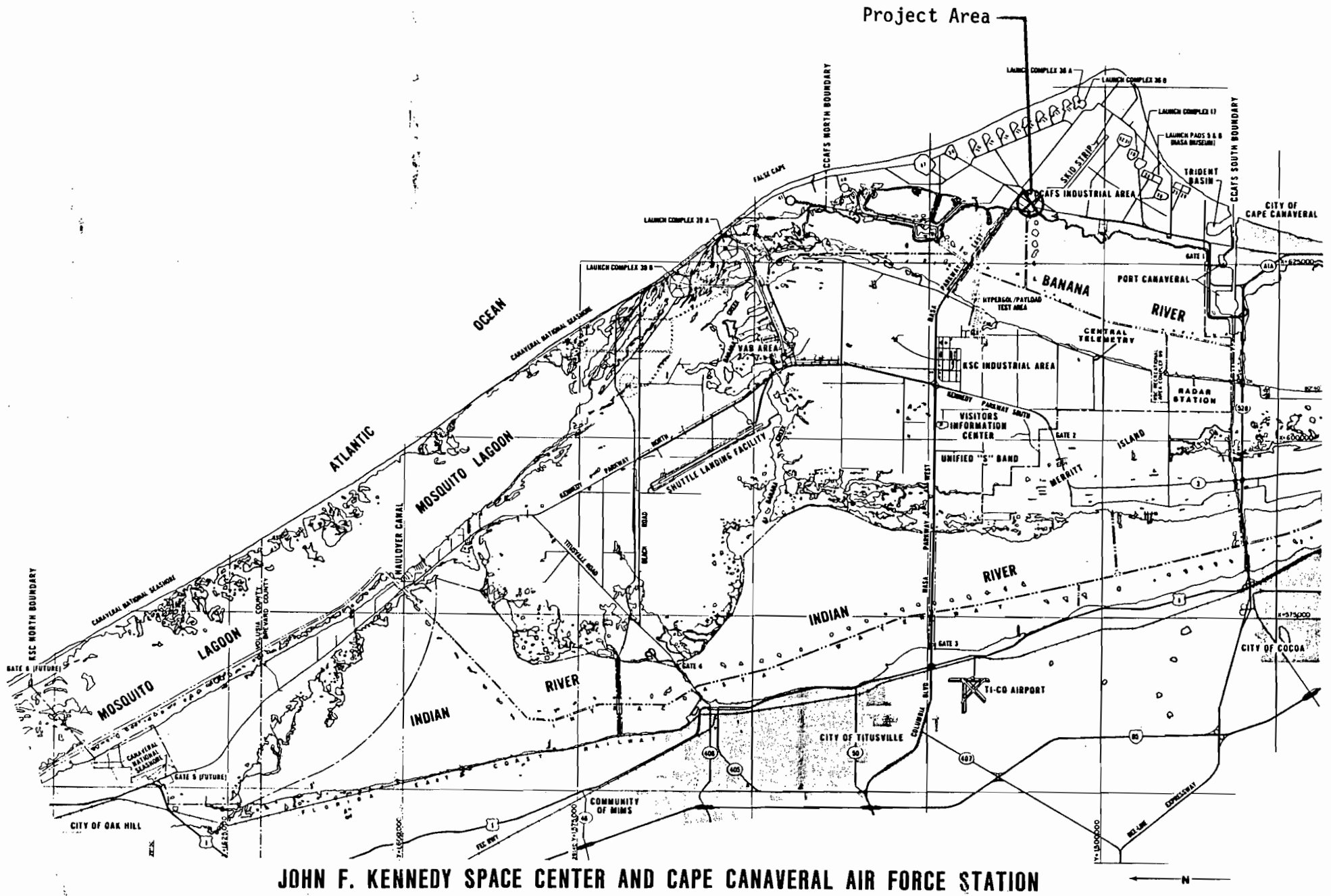


Figure 1: Project Area for Hangar L Steam Generator

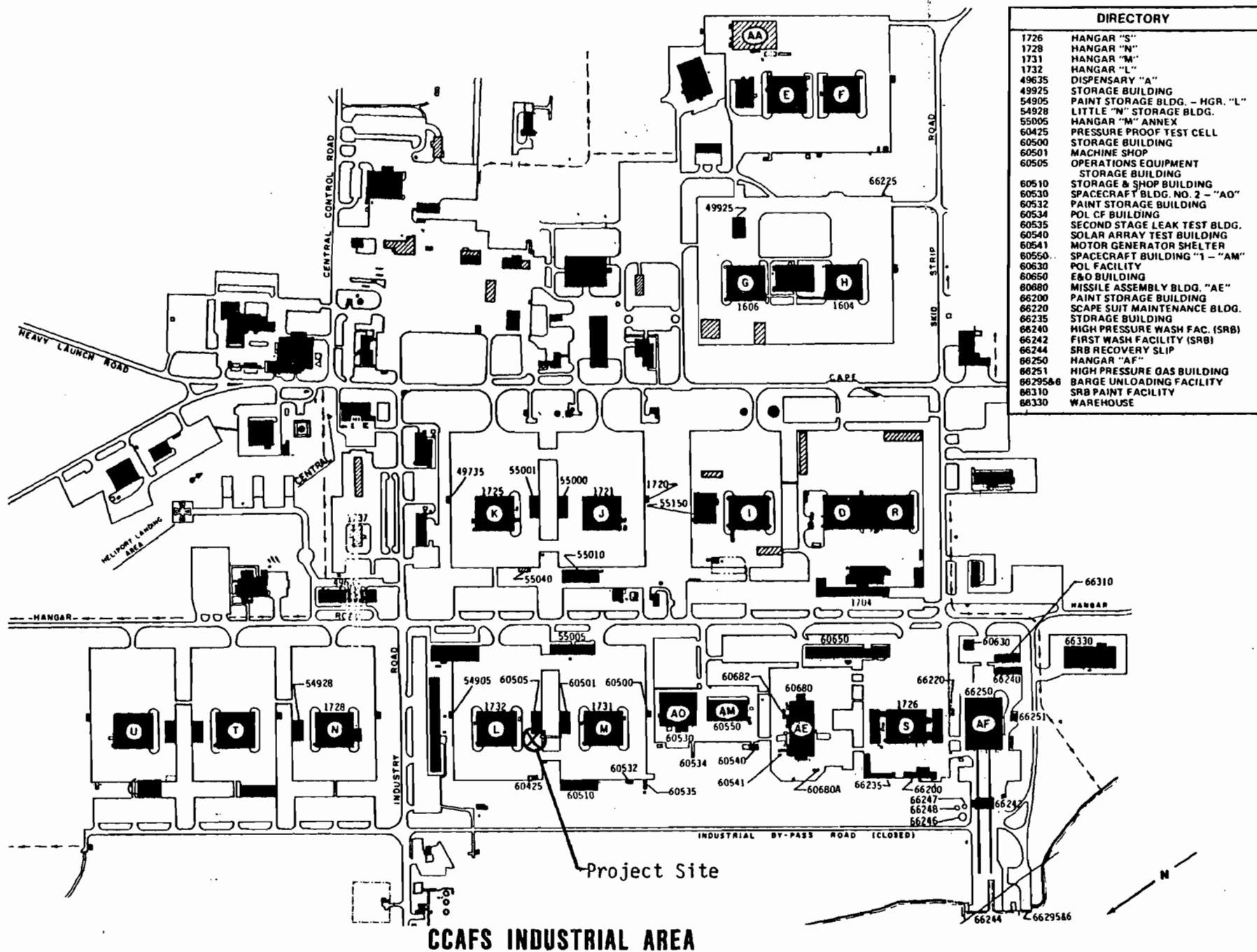


Figure 2; Project Site for Hangar L Steam Generator

Potential - Maximum Emissions

Max Heat Input = 2.1×10^6 Btu/hr

Operating hours = 4004

No. 2 Fuel Oil : SO₂ 0.5% Sulfur by weight max.

from fuel analysis 138,541 Btu/gal

Fuel Useage = 2.1×10^6 Btu/hr / 138,541 Btu/gal = 15 gal/hr

Emissions⁽¹⁾

SO₂: 142 S lb/1000 gal = 142(0.05) = 71 lb/1000 gal S

(71.0 lb/1000gal) (15 gal/hr) = 1.1 lb/hr

= 4404 lb/yr = 2.2 tons/yr

CO: (5 lb/1000 gal) (15 gal /hr) = 0.075 lb/hr

= 300 lb/yr = 0.15 tons/yr

NO_x: (22 lb/1000 gal) (15 gal/hr) = 0.33 lb/hr

= 1,321 lb/yr = 0.7 tons/yr

Part.: (2 lb/1000 gal) (15 gal/hr) = 0.03 lb/hr

= 120 lb/yr = 0.06 tons/yr

(1) Reference EPA "Compilation of Air Pollutant Emission Factors" AP-42.

DIMENSIONS

IN FEET AND INCHES—CENTIMETERS

SPL, SPH, SPW

25 through 150 HP
245 KW through 1471 KW

HAN ← AR "L"

SERIES	542									
	25 HP	245 KW	30 HP	294 KW	40 HP	392 KW	50 HP	490 KW	60 HP	588 KW
A—Overall Length (c)	6' 11"	210.8	7' 8"	233.7	10' 3"	312.4	11' 10"	360.7	13' 6"	411.5
B—Length of Shell	4' 11"	149.9	5' 9"	175.3	7' 3"	221	8' 10"	269.2	10' 5"	317.5
C—Length of Skid	4' 9"	144.8	5' 6"	167.6	7' 1"	215.9	8' 8"	264.2	10' 3"	312.4
D—Width of Skid	2' 6"	76.2	2' 6"	76.2	2' 6"	76.2	2' 6"	76.2	2' 6"	76.2
E—Boiler Width	3' 11"	119.4	3' 11"	119.4	3' 11"	119.4	3' 11"	119.4	3' 11"	119.4
E1—Overall Boiler Width	4' 4"	132.1	4' 4"	132.1	4' 4"	132.1	4' 4"	132.1	4' 4"	132.1
F—Height of Vent Conn.	4' 2"	127	4' 2"	127	4' 2"	127	4' 2"	127	4' 2"	127
G—Height of Water Line SPH	4' 2"	127	4' 2"	127	4' 2"	127	4' 2"	127	4' 2"	127
G—Height of Water Line SPL	4' 1"	124.5	4' 1"	124.5	4' 1"	124.5	4' 1"	124.5	N.A.	N.A.
H—Overall Height—SPL, SPW (b)	5'	152.4	5'	152.4	5'	152.4	5'	152.4	N.A.	N.A.
H—Overall Height—SPH (b)	4' 10"	147.3	4' 10"	147.3	4' 10"	147.3	4' 10"	147.3	4' 10"	147.3
I—Floor to Burner	2' 10"	86.4	2' 10"	86.4	2' 10"	86.4	2' 10"	86.4	2' 10"	86.4
J—Location Top Conn. SPH	2' 3"	68.6	2' 3"	68.6	2' 3"	68.6	2' 3"	68.6	2' 3"	68.6
J—Location Top Conn. SPL	2' 4"	71.1	2' 4"	71.1	2' 4"	71.1	2' 4"	71.1	N.A.	N.A.
J—Location Top Conn. SPW (a)	2' 4"	71.1	2' 4"	71.1	2' 4"	71.1	2' 4"	71.1	N.A.	N.A.
K—Location Bottom Conn. SPL, SPW (a)	1'	30.5	1'	30.5	1'	30.5	1'	30.5	N.A.	N.A.
L—Dist. Rear Tube Removal (e)	2' 6"	76.2	3' 2"	96.5	4' 9"	144.8	6' 4"	193	7' 11"	241.3
M—Dist. Front Tube Removal (d) (e)	1' 10"	55.9	2' 7"	78.7	3' 1"	94	4' 8"	142.2	5' 11"	180.3
N—Floor to Shell Height	4' 7"	139.7	4' 7"	139.7	4' 7"	139.7	4' 7"	139.7	4' 7"	139.7
O—Burner Extension (d)	1' 7"	48.3	1' 7"	48.3	2' 7"	78.7	2' 7"	78.7	2' 9"	83.8
P—Add. Boiler Length w/Vert. Vent.	1' 2"	35.6	1' 2"	35.6	1' 2"	35.6	1' 2"	35.6	1' 2"	35.6
T—Location Blowdown Conn.	1' 1"	33	1' 1"	33	1' 1"	33	1' 1"	33	1' 1"	33
Boiler I.D. Inches	42"	106.7	42"	106.7	42"	106.7	42"	106.7	42"	106.7
Size Tube Inches	2"	5.1	2"	5.1	2"	5.1	2"	5.1	2"	5.1
Bottom Shell to Floor Inches	12"	30.5	12"	30.5	12"	30.5	12"	30.5	12"	30.5
Supply Sizes	SPL In. (cm) PSI (KG/cm ²)	6" 150 # Flg.	15.2 10.5	6" 150 # Flg.	15.2 10.5	6" 150 # Flg.	15.2 10.5	6" 150 # Flg.	15.2 10.5	N.A. N.A.
	SPH In. (cm)	2" SCR.	5.1	2" SCR.	5.1	2" SCR.	5.1	2" SCR.	5.1	2" SCR. 5.1
Top Connection	SPW (a) In. (cm) PSI (KG/cm ²)	3" 150 # Flg.	7.6 10.5	3" 150 # Flg.	7.6 10.5	3" 150 # Flg.	7.6 10.5	3" 150 # Flg.	7.6 10.5	N.A. N.A.
	Return Size	SPL In. (cm)	3" SCR.	7.6	3" SCR.	7.6	3" SCR.	7.6	3" SCR.	7.6
Bottom Connection	SPW (a) In. (cm)	3" SCR.	7.6	3" SCR.	7.6	3" SCR.	7.6	3" SCR.	7.6	N.A. N.A.
Feed Water Conn. Size	SPH & SPL	1 1/4" SCR.	3.2	1 1/4" SCR.	3.2	1 1/4" SCR.	3.2	1 1/4" SCR.	3.2	1 1/4" SCR. 3.2
Vent Size	Inches - (cm)	9 3/4"	24.8	9 3/4"	24.8	9 3/4"	24.8	9 3/4"	24.8	9 3/4" 24.8

PSI — KG/CM² (Kilograms / cm²)

(a) Water boilers reverse flow
(b) Clearance for Safety Valves
add 8" (20 cm)
Clearance for Optional Aqua-
Temp add 25" (64 cm)

(c) 560 Series Dimension Shown
is for oil fuel. Add
13" for gas or gas/oil fuel.

(d) 560 Series Dimension shown
is for oil fuel. Subtract
13" for gas or gas/oil fuel.
(e) Use front or rear tube
removal dimension, not both.

GROSS RATINGS CAPACITY

SERIES	542										
	25 HP	245 KW	30 HP	294 KW	40 HP	392 KW	50 HP	490 KW	60 HP	588 KW	
Approx. Boiler HP (KW)	25	245	30	294	40	392	50	490	60	588	
Steam Lbs. per Hr. (KG/hr)	862	392	1035	470	1380	627	1725	784	2070	941	
E.D.R. Sq. Ft. (Sq. Met.) Gross Steam	3485	323.8	4188	389.1	5583	518.7	6979	648.3	8375	778	
Gross Water	5580	518.4	6700	622.4	8933	829.9	11167	1037.4	13400	1244.9	
M.C.A. Net Load Rating Steam Sq.Ft.	2790	259.2	3348	311	4463	414.6	5579	518.3	6695	622	
M.B.T.U. (KCAL), Input per Hr.	1048	264.1	1250	315	1675	422.1	2095	528	2520	635	
M.B.T.U. (KCAL), Output per Hr.	837	210.9	1005	253.3	1340	337.7	1675	422.1	2009	506.3	
Heating Surface Square Feet (Sq. Met.)	Water Side	136	12.63	163	15.14	218	20.25	274	25.45	328	30.47
	Fire Side	125	11.61	150	13.94	200	18.58	250	23.23	300	27.87
Min. Safety Valve Cap SPL, SPW	Lb./Hr.(KG/Hr.)	1000	454	1200	545	1600	727	2000	909	N.A.	N.A.
Min. Safety Valve Cap SPH	Lb./Hr.	1005	456.8	1340	609.1	1675	766.4	2009	913.2	2678	1217.3
Dry Weight* Lbs. (KG)	SPL	2255	1025	2530	1150	3525	1602	4050	1841	N.A.	N.A.
	SPW										
	SPH	2400	1091	2755	1252	3935	1788	4640	2114	5350	2432
Wet Weight* Lbs. (KG)	SPL	3545	1611	4105	1866	5670	2577	6765	3075	N.A.	N.A.
	SPW	3870	1759	4380	1991	6045	2748	7240	3291	N.A.	N.A.
	SPH	3755	1707	4405	2002	6175	2807	7480	3400	8780	3991
Water Capacity Gallons - Liters	SPL	163	617	198	749	270	1022	342	1294	413	1563
	SPH										
	SPW	195	738	223	844	303	1147	385	1457	N.A.	N.A.

Steam ratings are from water at 212°F to steam at 212°F Standard pressures steam 15 PSI and 150 PSI, Water 30 PSI
 Steam ratings are from water 100°C to steam at 100°C. Standard pressures steam 1.06 Kg/cm² and 10.55 Kg/cm², Water 2.12 Kg/cm²
 *Weights for Standard Light Oil Units

BURNER DATA

SERIES	542										
	25 HP	245 KW	30 HP	294 KW	40 HP	392 KW	50 HP	490 KW	60 HP	588 KW	
Input 1000 BTU Gas CFH (CMH)	1048	29.68	1250	35.4	1675	47.44	2095	59.33	2520	71.37	
Input 150 MBTU, Hvy. Oil GPH (LPH)	-	-	-	-	11.0	42.63	14.0	52.99	16.0	60.56	
Inout 140 MBTU, Lt. Oil GPH (LPH)	7.5	28.39	9.0	34.07	12.0	45.4	15.0	56.78	17.0	64.35	
Oil Pump	Power Takeoff From Forced Draft Blower Motor										
Motor Size (HP)	Lt. Oil	-	-	-	-	1/4	.186	1/4	.186	1/4	.186
Oil Pump	Hvy. Oil	-	-	-	-	1/4	.186	1/4	.186	1/4	.186
Capacity (GPH)	Lt. Oil	20	75.7	20	75.7	20	75.7	20	75.7	55	208.2
Capacity (GPH)	Hvy. Oil	-	-	-	-	100	378.5	100	378.5	100	378.5
Forced Draft Blower Motor HP	Lt. Oil/Hvy Oil (KW)	1/3/NA	.249/NA	1/3/NA	.249/NA	1/1	.746/.746	1/1 1/2	.746/1.12	2/1 1/2	1.49/1.12
Forced Draft Blower (RPM)		3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
Forced Draft Blower CFM (CMM)		315	8.92	315	8.92	450	12.74	500	14.16	600	16.99
Compressor Motor	Hvy. Oil Only	-	-	-	-	1	.746	1	.746	1	.746
St'd. Control Circuit Voltage		115	115	115	115	115	115	115	115	115	115
St'd. Blower Motor Characteristics		1/115/60	1/115/60	1/115/60	1/115/60	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60
St'd. Comp. Motor Characteristics		-	-	-	-	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60
St'd. Oil Pump Motor Characteristics (Lt. Oil)		-	-	-	-	-	-	-	-	-	-
St'd. Oil Pump Motor Characteristics (Hvy. Oil)		-	-	-	-	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60	3/230/60
Elec. Heater Size	# 6 Oil	SPW	-	-	-	3000	3000	3000	3000	N.A.	N.A.
	# 6 Oil	SPL & SPH	-	-	-	2000	2000	2000	2000	2000	2000
	# 5 Oil		-	-	-	1000	1000	2000	2000	2000	2000
Type Ignition	Lt. Oil	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.	Elec.
	Other Fuels	Gas/Elec.	Gas/Elec.	Gas/Elec.	Gas/Elec.	Gas/Elec.	Gas/Elec.	Gas/Elec.	Gas/Elec.	Gas/Elec.	Gas/Elec.

LBS - KG (kilograms) M.B.T.U. - KCAL (kilocalories) NA - Not Available
 HP - KW (kilowatts) CFH - CMH (cubic meters/hr)
 LBS/hr - KG/hr GPH - LPH (liters/hr)
 Sq. Ft. - Sq. Met. (square meters) CFM - CMM (cubic meters/min)
 Cu. Ft. - Cu. Met. (cubic meters) PSI - KG/CM² (kilograms/cm²)