



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

Certified Mail -- Return Receipt Requested

June 30, 2004

Mr. Frederick F. Haddad, Jr.
Vice President
Power Resources Business Unit
Orlando Utilities Commission
500 South Orange Avenue
P.O. Box 3193
Orlando, Florida 32802

Re: **DRAFT Title V Permit Renewal No. 0090008-003-AV**
Indian River Plant

Dear Mr. Haddad, Jr.:

We have begun the review of your recent application for renewal of the Title V Permit for this facility. However, we must deem your application *incomplete*, because we need further information relative to the compliance assurance monitoring (CAM) plan included with the application. Specifically, the following comments/questions are a result of our review of the submitted CAM plan for water injection for NO_x control for the four combustion turbines at the facility.

- Please be advised that, if your company specifies that the NO_x continuous emissions monitoring system (CEMS) for the C and D turbines will be utilized as the continuous compliance determination method for the renewal permit, then those units would be exempt from CAM.
- For the A and B turbines (and C and D if you choose not to employ their CEMS), we need additional information on the heat input curves and corresponding test results that justify compliance at a certain injection rate as noted below.
- Specifically, when was the last time the curves were updated, and how often do you need to revise them? Further, what is their margin of compliance with the emissions limits?
- It appears that the information that was submitted for the C and D turbines contains a good table of target vs. required injection rates, but it does not contain the corresponding test data. Also, the information for the A and B turbines does not contain a table, but is only provided in equation form. To stay consistent with the

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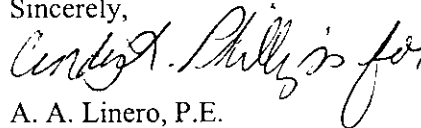
approved format (see enclosure), we will need you to provide the table of target values for the A and B turbines (i.e., similar in format to what was provided for the C and D turbines).

- All test data provided should be for a minimum of five years.
- Enclosed with this letter is a sample EPA approved CAM plan that may be of help to you in responding to the items discussed above.

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Permit applicants are advised that Rule 62-213.420(1)(b), F.A.C., requires applicants to respond to requests for information within 90 days, unless the applicant has requested in writing, and has been granted, additional time within 90 days.

When we receive this information, we will continue processing your application. If you have any questions, please contact Tom Cascio at 850-921-9526.

Sincerely,



A. A. Linero, P.E.
Program Administrator
Permitting South Section

Cc: Ms. Denise M. Stalls, OUC

Enclosure

TECO Power Services
Hardee Power Station
Facility ID #: 0490015

APPENDIX CAM

Compliance Assurance Monitoring Requirements

Compliance Assurance Monitoring Requirements

Pursuant to Rule 62-213.440(1)(b)1.a., F.A.C., the CAM plans that are included in this appendix contain the monitoring requirements necessary to satisfy 40 CFR 64. Conditions 1. – 17. are generic conditions applicable to all emissions units that are subject to the CAM requirements. Specific requirements related to each emissions unit are contained in the attached tables, as submitted by the applicant and approved by the Department.

40 CFR 64.6 Approval of Monitoring.

1. The attached CAM plan(s), as submitted by the applicant, is/are approved for the purposes of satisfying the requirements of 40 CFR 64.3.
[40 CFR 64.6(a)]
2. The attached CAM plan(s) include the following information:
 - (i) The indicator(s) to be monitored (such as temperature, pressure drop, emissions, or similar parameter);
 - (ii) The means or device to be used to measure the indicator(s) (such as temperature measurement device, visual observation, or CEMS); and
 - (iii) The performance requirements established to satisfy 40 CFR 64.3(b) or (d), as applicable.[40 CFR 64.6(c)(1)]
3. The attached CAM plan(s) describe the means by which the owner or operator will define an exceedance of the permitted limits or an excursion from the stated indicator ranges and averaging periods for purposes of responding to (see **CAM Conditions 5. - 9.**) and reporting exceedances or excursions (see **CAM Conditions 10. – 14.**).
[40 CFR 64.6(c)(2)]
4. The permittee is required to conduct the monitoring specified in the attached CAM plan(s) and shall fulfill the obligations specified in the conditions below (see **CAM Conditions 5. - 17.**).
[40 CFR 64.6(c)(3)]

40 CFR 64.7 Operation of Approved Monitoring.

5. Commencement of operation. The owner or operator shall conduct the monitoring required under this appendix upon the effective date of this Title V permit.
[40 CFR 64.7(a)]
6. Proper maintenance. At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
[40 CFR 64.7(b)]
7. Continued operation. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the

operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

[40 CFR 64.7(c)]

8. Response to excursions or exceedances.

- a. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions, if allowed by this permit). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- b. Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

[40 CFR 64.7(d)(1) & (2)]

9. Documentation of need for improved monitoring. If the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

[40 CFR 64.7(e)]

40 CFR 64.8 Quality Improvement Plan (QIP) Requirements.

10. Based on the results of a determination made under **CAM Condition 8.a.**, above, the permitting authority may require the owner or operator to develop and implement a QIP. Consistent with **CAM Condition 4.**, an accumulation of exceedances or excursions exceeding 5 percent duration of a pollutant-specific emissions unit's operating time for a reporting period, may require the implementation of a QIP. The threshold may be set at a higher or lower percent or may rely on other criteria for purposes of indicating whether a pollutant-specific emissions unit is being maintained and operated in a manner consistent with good air pollution control practices.

[40 CFR 64.8(a)]

11. Elements of a QIP:

- a. The owner or operator shall maintain a written QIP, if required, and have it available for inspection.
- b. The plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:

- (i) Improved preventive maintenance practices.
- (ii) Process operation changes.
- (iii) Appropriate improvements to control methods.
- (iv) Other steps appropriate to correct control performance.
- (v) More frequent or improved monitoring (only in conjunction with one or more steps under **CAM Condition 11.b(i)** through **(iv)**, above).

[40 CFR 64.8(b)]

12. If a QIP is required, the owner or operator shall develop and implement a QIP as expeditiously as practicable and shall notify the permitting authority if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

[40 CFR 64.8(c)]

13. Following implementation of a QIP, upon any subsequent determination pursuant to **CAM Condition 8.b.**, the permitting authority may require that an owner or operator make reasonable changes to the QIP if the QIP is found to have:

- a. Failed to address the cause of the control device performance problems; or
- b. Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

[40 CFR 64.8(d)]

14. Implementation of a QIP shall not excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

[40 CFR 64.8(e)]

40 CFR 64.9 Reporting And Recordkeeping Requirements.

15. General reporting requirements.

- a. On and after the date specified in **CAM Condition 5.** by which the owner or operator must use monitoring that meets the requirements of this appendix, the owner or operator shall submit monitoring reports semi-annually to the permitting authority in accordance with Rule 62-213.440(1)(b)3.a., F.A.C.
- b. A report for monitoring under this part shall include, at a minimum, the information required under Rule 62-213.440(1)(b)3.a., F.A.C., and the following information, as applicable:
 - (i) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
 - (ii) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
 - (iii) A description of the actions taken to implement a QIP during the reporting period as specified in **CAM Conditions 10.** through **14.** Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

[40 CFR 64.9(a)]

16. General recordkeeping requirements.

- a. The owner or operator shall comply with the recordkeeping requirements specified in Rule 62-213.440(1)(b)2., F.A.C. The owner or operator shall maintain records of monitoring data,

monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to **CAM Conditions 10.** through **14.** and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).

- b. Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

[40 CFR 64.9(b)]

40 CFR 64.10 Savings Provisions.

17. It should be noted that nothing in this appendix shall:

- a. Excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act. The requirements of this appendix shall not be used to justify the approval of monitoring less stringent than the monitoring which is required under separate legal authority and are not intended to establish minimum requirements for the purpose of determining the monitoring to be imposed under separate authority under the Act, including monitoring in permits issued pursuant to title I of the Act. The purpose of this part is to require, as part of the issuance of a permit under Title V of the Act, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of this part.
- b. Restrict or abrogate the authority of the Administrator or the permitting authority to impose additional or more stringent monitoring, recordkeeping, testing, or reporting requirements on any owner or operator of a source under any provision of the Act, including but not limited to sections 114(a)(1) and 504(b), or state law, as applicable.
- c. Restrict or abrogate the authority of the Administrator or permitting authority to take any enforcement action under the Act for any violation of an applicable requirement or of any person to take action under section 304 of the Act.

[40 CFR 64.10]

Hardee Power Station

Emissions Units -001, -002 & -003

**Natural Gas and Oil-Fired Combustion Turbines
NO_x Emissions Controlled By Water Injection**

Table 1. Monitoring Approach

		<u>Compliance Indicator</u>
I.	Indicator	Water-to-fuel ratio.
	Measurement Approach	Continuous Monitoring System measuring water injection rate, fuel consumption, and water-to-fuel ratio.
II.	Indicator Range	An excursion is defined as any 1-minute average that the water-to-fuel ratio falls below the level indicated by the heat input curves shown in figures 1 – 6 (typical target values for different load percentages are shown in Table 2), below. If there is a problem with fuel or water flow that causes the actual ratio to fall below the target during any 1-minute averaging period, an alarm notifies the control room staff of the problem. Since the data is monitored in 1-minute averages and the compliance standard is based on 1-hour averages, the alarms allow the operating staff to investigate the cause and take corrective action prior to having a non-compliant situation.
III.	Performance Criteria	
	A. Data Representativeness	The Mark IV combustion turbine control system continuously monitors the fuel flow rate and sends a signal to the water flow control valve to adjust the flow to meet the target ratio. The target ratio is calculated by the Mark IV based on algorithms programmed into the system to account for varying ambient conditions relevant to proper control.
	B. Verification of Operational Status	Annual compliance testing; and, reestablishment of the water-to-fuel ratio, if indicated by a failed compliance test.
	C. QA/QC Practices and Criteria	Operate and maintain the Mark IV combustion turbine control system according to manufacturer's specifications. All metering equipment, including transmitters, are calibrated annually and meet or exceed the minimum regulatory requirement of 5% accuracy.
	D. Monitoring Frequency	Continuous.
	E. Data Collection Procedures	The Mark IV combustion turbine control system continuously monitors the fuel flow rate and sends a signal to the water flow control valve to adjust the flow to meet the target ratio. The target ratio is calculated by the Mark IV based on algorithms programmed into the system to account for varying ambient conditions relevant to proper control.
F. Averaging Period	1 minute.	

Table 2. Typical Target Values for Water-to-Fuel Ratio

Load, percent	Water-to-Fuel Ratio Target Value When Firing Natural Gas			Water-to-Fuel Ratio Target Value When Firing Distillate Fuel Oil		
	CT-1A	CT-1B	CT-2A	CT-1A	CT-1B	CT-2A
50	0.45	0.43	0.31	0.55	0.36	0.37
75	0.58	0.56	0.50	0.60	0.40	0.40
90	0.66	0.64	0.59	0.65	0.52	0.55
100	0.71	0.69	0.69	0.69	0.63	0.68

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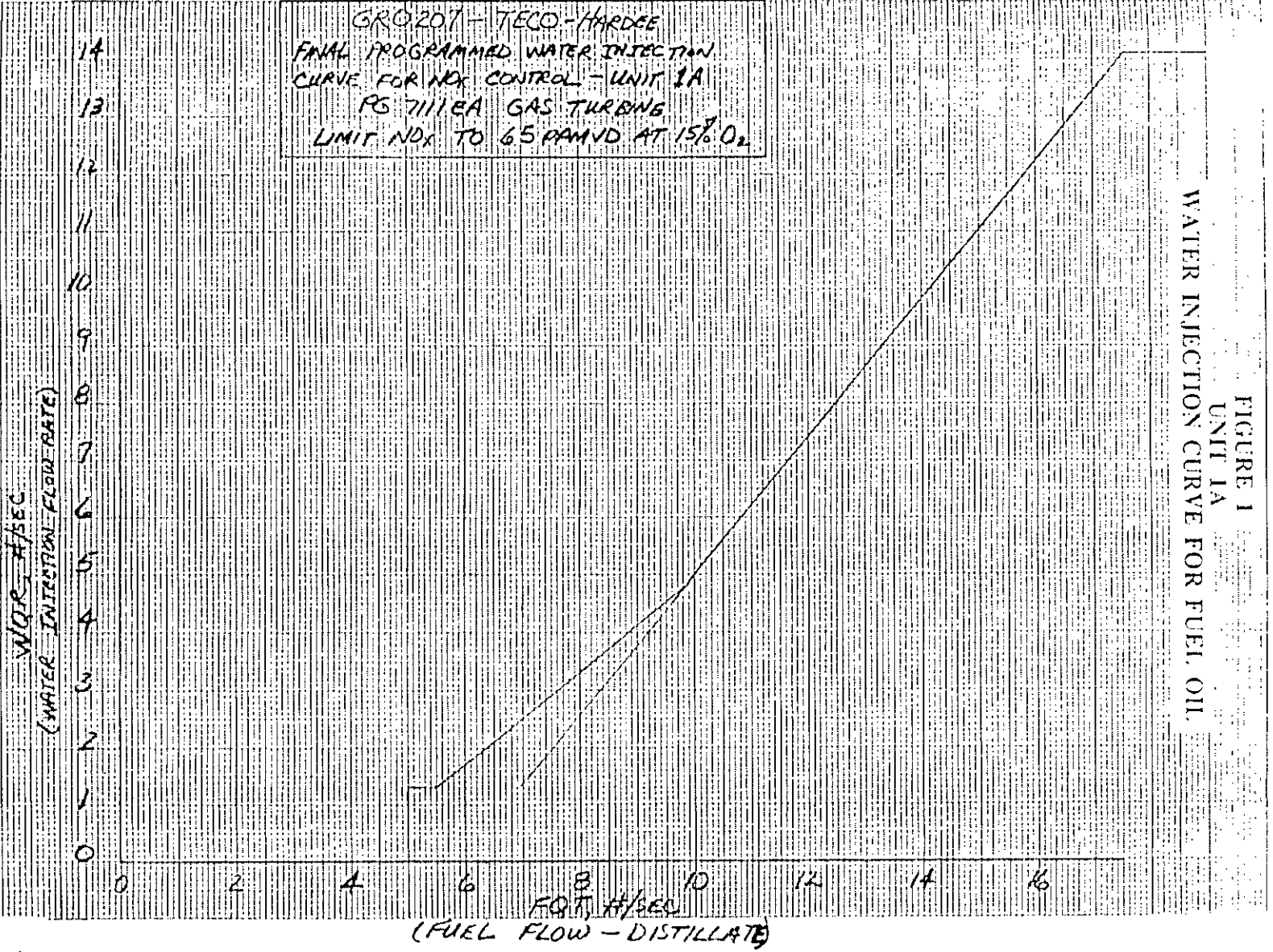


FIGURE 1
UNIT 1A
WATER INJECTION CURVE FOR FUEL OIL

10/17/92

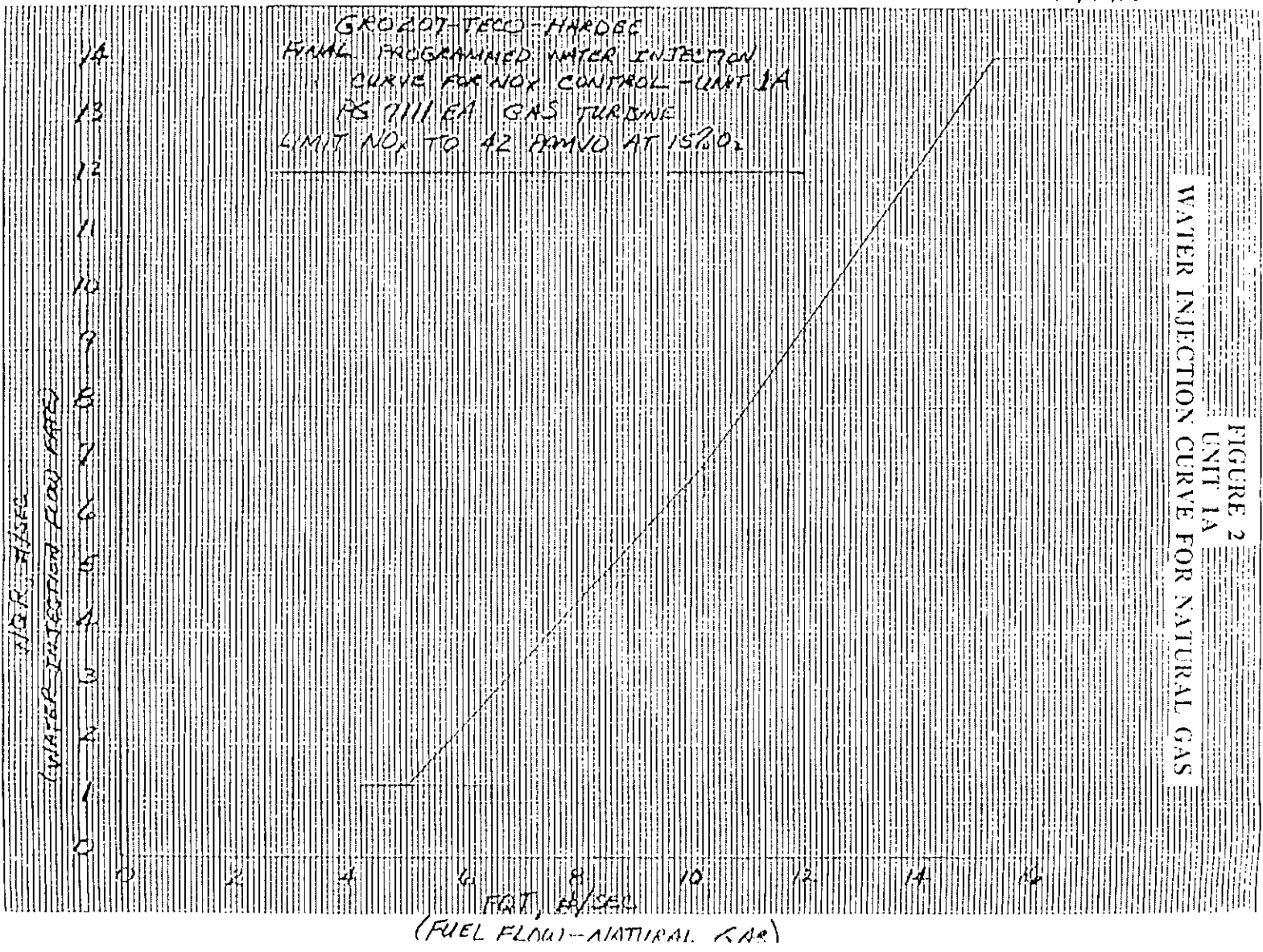
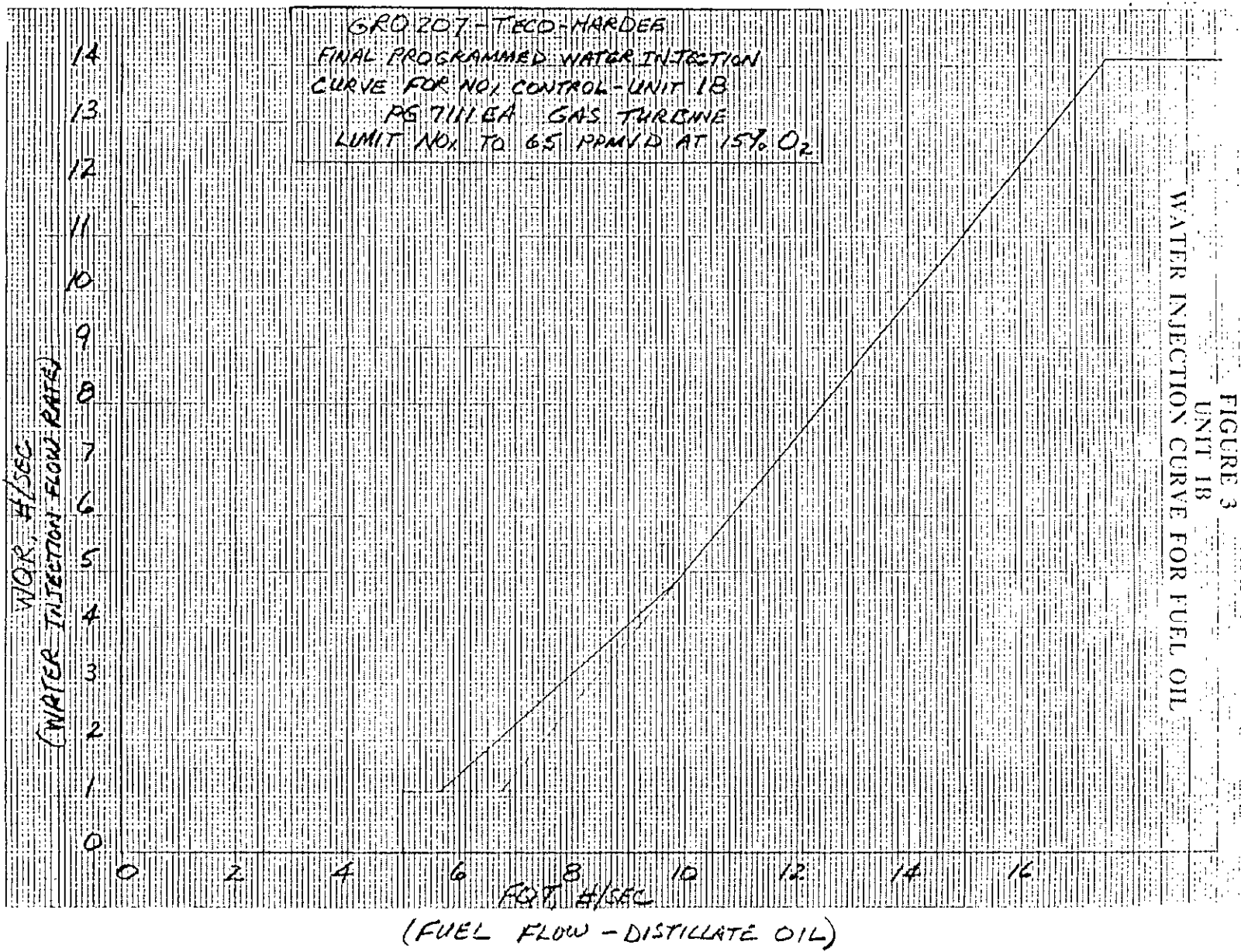


FIGURE 2
UNIT 1A
WATER INJECTION CURVE FOR NATURAL GAS



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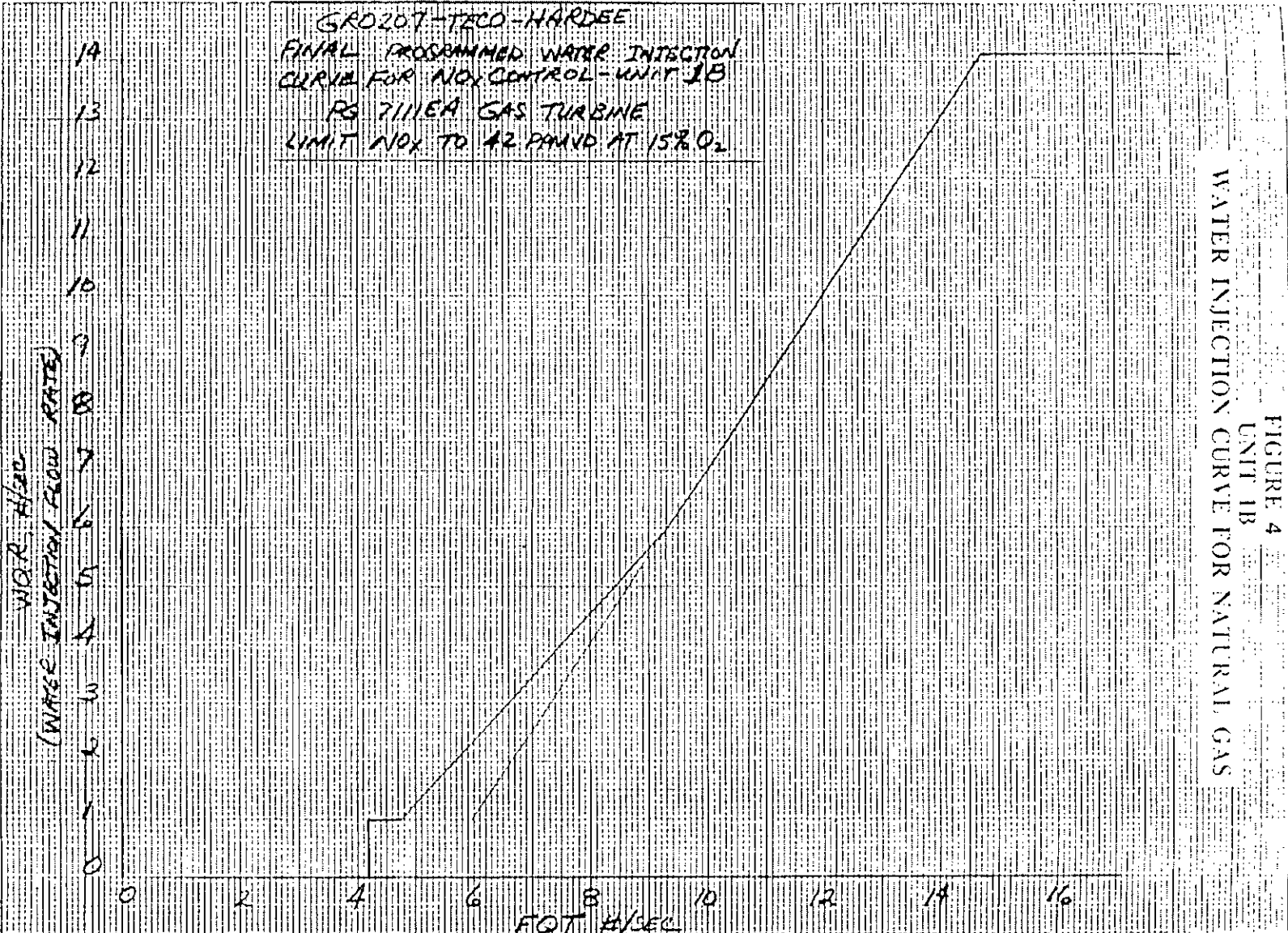


FIGURE 4
UNIT 1B
WATER INJECTION CURVE FOR NATURAL GAS

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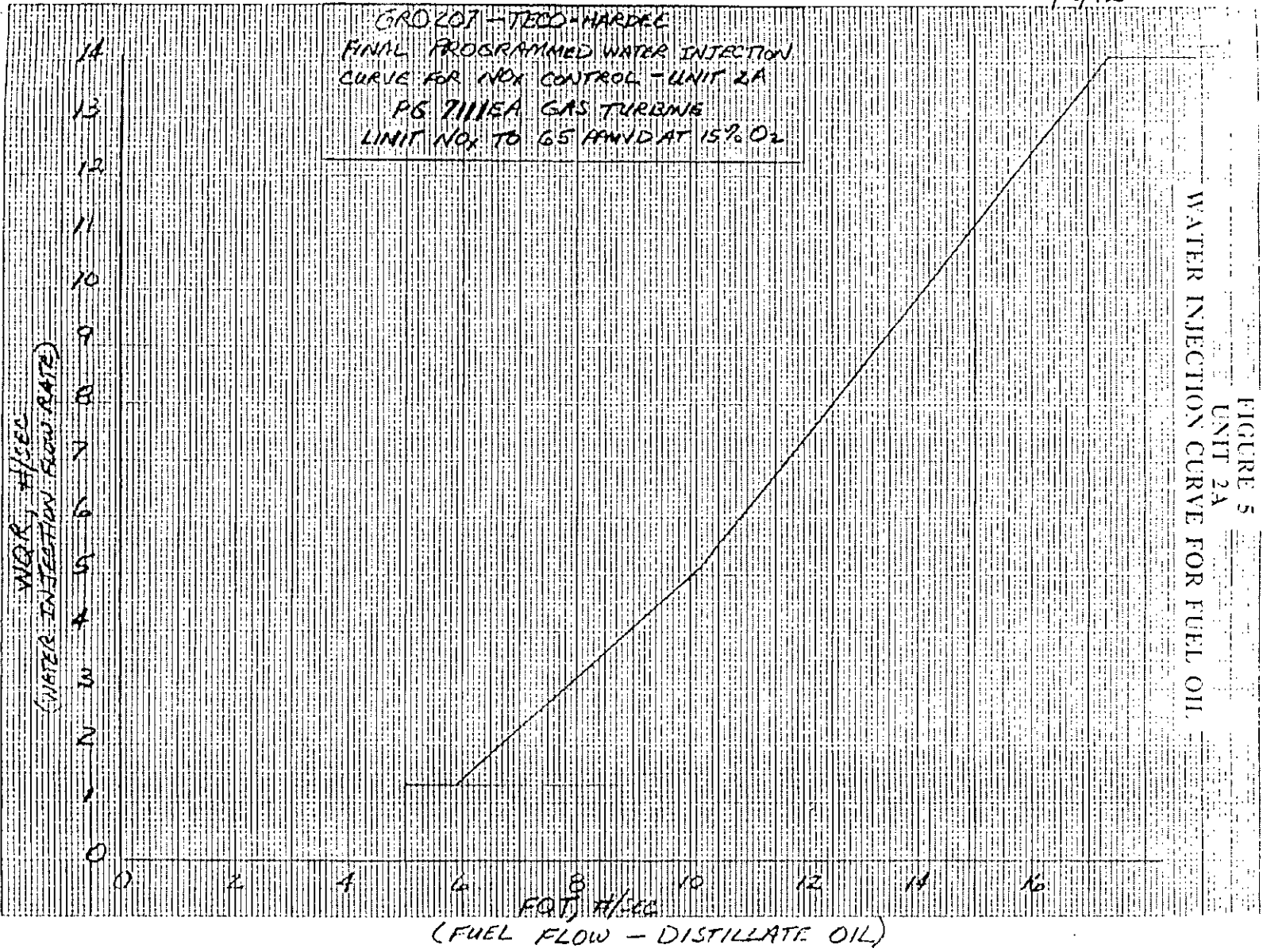


FIGURE 5
UNIT 2A

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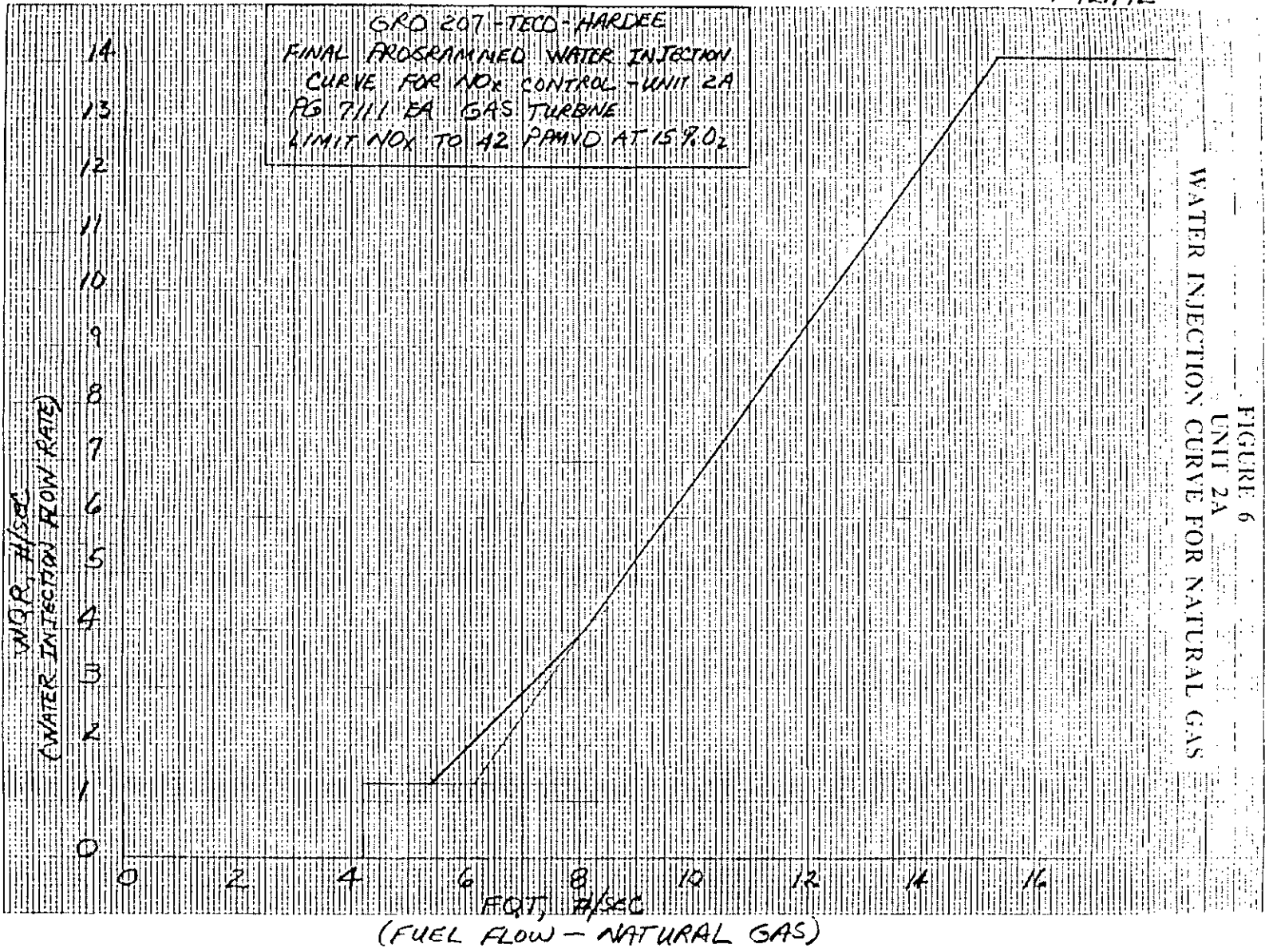


FIGURE 6
UNIT 2A

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1. Article Addressed to: Mr. Frederick F. Haddad, Jr. Vice President Power Resources Business Unit Orlando Utilities Commission 500 South Orange Avenue P.O. Box 3193 Orlando, Florida 32802	B. Received by (Printed Name) <i>Sarah A. Smith</i> C. Date of Delivery <i>7/6/04</i>
2. Article Number (Transfer from service label)	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
PS Form 3811, August 2001	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D. 4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
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