



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



In the matter of)
) Trading Agreement
The State of Connecticut and) and Order No. 8134A
) Modification 1
United Technologies Corporation)

Whereas, the Commissioner of Environmental Protection ("Commissioner") and United Technologies Corporation (P&W) having agreed to the terms and conditions set forth in Trading Agreement and Order 8134A issued on April 15, 2003, do now, by mutual agreement, modify said Trading Agreement and Order as follows:

- 1. Delete paragraph A.1. and substitute the following therefor:

P&W is a company which owns and operates jet engine manufacturing facilities at 400 Main Street, East Hartford, Connecticut (facility 1") and Aircraft Road, Middletown, Connecticut (facility 2").

- 2. Delete paragraph A.2. and substitute the following therefor:

At facility 1, P&W owns and operates three (3) dual-fuel burning boilers, numbered 6, 8, and 9 ("facility 1 boilers"), capable of burning natural gas or No. 6 fuel oil. At facility 2, P&W owns and operates two (2) No. 6 fuel oil burning boilers, numbered 2 and 4 ("facility 2 boilers") and jet fuel burning production GG-8 gas turbine engines ("facility 2 engines"). At facility 2 similar production GG-8 gas turbine engines are tested in test cells. The facility 1 boilers, facility 2 boilers, and facility 2 engines are subject to Section 22a-174-22 of the Regulations of Connecticut State Agencies ("Regulations"), pertaining to the control of NOx emissions.

- 3. Delete paragraph A.3. and Table 1 and substitute the following therefor:

Official U.S. Environmental Protection Agency ("EPA") Reference Method 7 emission testing performed on December 22, 2005 for the facility 2 boilers, January 25, 26, and 27, 2006 for the facility 1 boilers, and April 19, 2006 for the facility 2 engines resulted in NOx emission rates as shown in Table 1 below:

TABLE 1

Facility/ Equipment	Fuel	Heat Input Limitation MMBtu/hr	Steam Production Limitation Lbs steam/hr	Test Steam Production Lbs steam/hr	% of MRC	Test Rate*	FLER*	RACT*
Facility 1 - Boiler no. 6	Nat. gas #6 oil	143	120,000	116,700	97	0.327	.36	0.20
		144	125,000	122,600	98	0.434	.48	0.25
Facility 1 - Boiler no. 8	Nat. gas #6 oil	171	125,000	123,500	98	0.248	.27	0.20
		182	130,000	123,300	95	0.320	.35	0.25
Facility 1 - Boiler no. 9	Nat. gas #6 oil	165	120,000	118,400	99	0.241	.27	0.20
		171	125,000	122,300	98	0.309	.35	0.25
Facility 2 - Boiler no. 2	#6 oil	106	73,334	69,473	95	0.337	.37	0.25
Facility 2 - Boiler no. 4	#6 oil	57	36,886	35,667	97	0.398	.44	0.25
Facility 2 - Engines	Jet fuel	283	N/A	N/A	93**	346ppm	230 lb/hr	75 ppm

* Rates are in Lbs/MMBtu unless otherwise noted

** For GG8 Engine- % of MRC based on engine pressure ratio.

4. Delete paragraph A.4. and substitute the following therefor:

On and after May 31, 1995, Section 22a-174-22(e) of the Regulations requires that the facility 1 boilers, facility 2 boilers, and the facility 2 engines emit NOx at rates no greater than the RACT rates shown in Table 1 above. P&W proposes to use approved DERCs or allowances for compliance purposes at facility 1 and facility 2 when and if P&W chooses to operate the facility 1 boilers, facility 2 boilers and facility 2 engines on fuels that exceed the RACT rates shown in Table 1 above.

5. Delete paragraph A.5. and Table 2 in their entirety.

6. Delete paragraph A.8. and Table 3 and substitute the following therefor:

P&W has agreed to accept the heat input and steam output operating restrictions on the facility 1 boilers and facility 2 boilers as shown in Table 1.

7. Delete paragraph C.1. and substitute the following therefor:

After May 31, 1995, and through May 1, 2009 or until P&W achieves compliance with the emission standards in Section 22a-174-22(e) of the Regulations, whichever occurs earlier, P&W shall acquire and retire approved DERCs and shall document and record the amounts of all fuel and DERCs used by the facility 1 boilers, and facility 2 boilers and engines, each month, and provide such records in accordance with the following and Section 22a-174-22 of the Regulations:

8. Delete the date April 30, 2007 and substitute therefore the date May 1, 2009 in paragraph C.1.h..

9. Delete paragraph C.1.a. and substitute the following therefor:

DERC Shortfall. At a minimum, DERCs required shall be adjusted upwards by 100% if DERCs or allowances are not in P&W's possession for use prior to the first day of each month or applicable season. However, nothing in this Trading Agreement and Order shall affect the Commissioner's authority to institute any proceeding or take any other action to require additional upward adjustment, based on the gravity of any alleged noncompliance or violation of law. P&W shall permanently retire the quantity of DERCs equivalent to the excess emissions plus a 100% premium within sixty (60) days of P&W's discovery of the DERC shortfall. P&W shall certify and report any such DERC retirement to the Commissioner in accordance with paragraph C.24. of this Trading Agreement and Order.

10. Delete paragraph C.1.b. and substitute the following therefor:

No later than the twentieth day of each month, P&W shall calculate and permanently retire DERCs used in the preceding calendar month for each boiler and engine, as follows:

Boiler DERCs (in tons) = $[(\text{FLER in lbs/MMBtu}) - (0.95 \times \text{NOx allowable rate in lbs/MMBtu})] \times (\text{fuel use in MMBtu}) \div 2000 \text{ pounds/ton}$

Engine DERCs (in tons) = $[\text{Hours of Operation} \times (\text{FLER in lbs/hr}) - (0.95 \times \text{NOx allowable rate in lbs/MMBtu})] \times (\text{fuel use in MMBtu}) \div 2000 \text{ pounds/ton}$

Where:

- NOx allowable rate = RACT rate shown in Tables 1 of this Trading Agreement and Order.
- FLER = full load emission rate as shown in Table 1 of this Trading Agreement and Order.
- Discount (0.95) = 5% design margin applied to the allowable rate.

11. Delete paragraph C.2 and Table 4 and substitute the following therefor:

Prior to May 1, 2009 P&W shall comply during operation on the fuels shown in Table 1 with the FLERs shown in Table 1, averaged on a 24-hour basis.

12. Delete the date May 1, 2007 and substitute therefore the date May 1, 2009 in paragraphs C.3., and C.7..

13. Delete paragraph C.4. and substitute the following therefor:

FLERs, emission test rates and fuels set forth in Table 1 may be modified only after the consent of the Commissioner by written modification of this Trading Agreement and Order.

14. Delete paragraph C.5. and substitute the following therefor:

FLER Exceedance. Noncompliance with an established FLER shall subject P&W to make restitution by matching the quantity of emissions ("true up") caused by the exceedance plus a 100% premium. The true up in tons of DERCS shall be equal to the FLER exceedance in lbs/MMBtu, multiplied by the total heat input during the period of noncompliance divided by 2000 lbs/ton. If the period of noncompliance is not known, the time period from the completion of the last/previous Commissioner witnessed emission test through the date the FLER compliance is achieved as approved by the Commissioner shall be used. However, nothing in this Trading Agreement and Order shall affect the Commissioner's authority to institute any proceeding or take any other action to require additional upward adjustment, based on the gravity of any alleged noncompliance or violation of law. P&W shall permanently retire DERCS calculated in accordance with the above plus a 100% premium within sixty (60) days of P&W's discovery of the FLER exceedance. P&W shall report any FLER exceedance to the Commissioner in accordance with paragraph C.24. of this Trading Agreement and Order.

15. Delete paragraph C.6. and substitute the following therefor:

In accordance with Section 22a-174-22(k) of the Regulations, P&W shall conduct NOx emission tests of the facility 1 boilers, facility 2 boilers, and the facility 2 engines at least once every five years. Such NOx emission test shall be conducted prior to five years from the date of the last test for each such unit.

16. Delete paragraph C.7. and substitute the following therefor:

From the date of the most recent NOx emission tests identified in paragraph A.3. and prior to May 1, 2009, P&W shall comply with paragraph 6 of this Trading Agreement and Order Modification. P&W shall demonstrate compliance with these limitations by monitoring and documenting hourly steam production. However, if at any time after the date of the most recent emission tests specified in paragraph A.3. during the period that this Trading Agreement and Order remains in effect, P&W is unable to limit maximum rated capacity as stated above, P&W shall conduct NOx emissions testing of the facility 1 boiler no. 6, facility 1 boiler no. 8, facility 1 boiler no. 9, facility 2 boiler no. 2, or facility 2 boiler no. 4 on or before sixty (60) days after exceedance of the above limits in accordance with the following:

- a. P&W shall submit to the Commissioner for his review and written approval an Intent-To-Test ("ITT") protocol not less than thirty (30) days prior to the emissions testing required pursuant to this Trading Agreement and Order. The ITT protocol shall include at least:
 1. The Department of Environmental Protection's Bureau of Air Management Test Form No. 1, "Intent to Test";
 2. System operating parameters indicative of proper operation, including, but not limited to, fuel firing rate, NOx emissions rate, temperature and pressure, and steam production rate.

The ITT protocol shall provide that Respondent shall perform testing as specified in Sections 22a-174-5 and 22a-174-22 of the Regulations, including operating the facility 1 boiler no. 6, facility 1 boiler no. 8, facility 1 boiler no. 9, facility 2 boiler no. 2, or facility 2 boiler no. 4 at not less than ninety percent (90%) of its maximum capacity limit or highest operating rate since its previous emission test, whichever is higher.

- b. Respondent shall perform all testing in accordance with the approved ITT protocol.
- c. In conducting and performing the required testing, and in analyzing the results of such testing, Respondent shall adhere to methods specified in Sections 22a-174-5 and 22a-174-22 of the Regulations and as approved by the United States EPA and the Commissioner.

- d. Respondent shall schedule all emissions testing so as to allow the Commissioner to be present during such testing and to independently verify facility operations, air pollution control equipment parameters, and testing procedures.
- e. Within 30 days after completing any emissions testing required by this Trading Agreement and Order, P&W shall submit to the Commissioner a written report providing the results of such testing; within 15 days of a notice from the Commissioner indicating any deficiencies in such report, P&W shall submit a revised report.

17. Delete paragraph C.9. and substitute the following therefor:

Vintage Restriction. For the purposes of compliance with Section 22a-174-22 of the Regulations, DERCs/allowances shall only remain valid for five (5) calendar years from the year of the generation/allocation of such DERCs/allowances. DERCs/allowances older than five (5) calendar years from their creation/allocation are not valid for use for compliance with Section 22a-174-22 of the Regulations.

18. Delete paragraph C.13. and substitute the following therefor:

Certification of documents. Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this Trading Agreement and Order shall be signed by P&W or, if P&W is not an individual, by an individual who is an authorized representative of P&W, in accordance with Section 22a-174-2a(a) of the Regulations of Connecticut State Agencies, and by the individual(s) responsible for actually preparing such document, and each such individual shall certify in writing as follows:

“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute.”

19. Delete paragraph C.24. and substitute the following therefor:

Notification of noncompliance. In the event that P&W becomes aware that it did not or may not comply, or did not or may not comply on time, with any requirement of this Trading Agreement and Order or of any document required hereunder, P&W shall

immediately notify by telephone the section identified in the next paragraph and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. Within ten (10) days of the initial notice, P&W shall submit in writing the date, time, and duration of the noncompliance and the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and P&W shall comply with any dates which may be approved in writing by the Commissioner. Notification by P&W shall not excuse noncompliance or delay, and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically so stated by the Commissioner in writing.

20. Delete the name "Ms. Wendy Jacobs" in paragraph C.25

21. Include a new paragraph C.26. as follows:

Future Compliance Report. On or before September 1, 2008, P&W shall submit a report in writing to the Commissioner, as directed in paragraph C.25. of this Trading Agreement and Order, indicating how the P&W shall comply with Section 22a-174-22 of the Regulations on and after May 1, 2009.

22. Include a new paragraph C.27. as follows:

Extension. No later than May 1, 2009, , P&W shall comply with the requirements of Sections 22a-174-22(d)(1) and 22a-174-22(d)(2)(A) of the Regulations. There is no assurance that after full program review of this and other Trading Agreements and Orders that the Commissioner will grant a written extension of this Trading Agreement and Order.

All other terms and conditions of Trading Agreement and Order no. 8134A issued by the Commissioner acting under Chapter 446c, Sections 22a-6, 22a-171, 22a-174, 22a-176, and 22a-177 of the Connecticut General Statutes shall remain in effect.

P&W hereby consents to the entry of this modification to the Trading Agreement and Order without further notice.

United Technologies Corporation

Signature: David M. Russell

Name: David M. Russell

Title: Director - Facilities

Date: 4-30-07

Entered as a modification of an Order of the Commissioner of Environmental Protection numbered 8134A

on May 22, 2007.

Amy Marrella
for Gina McCarthy
Commissioner