

FORM AEC-374
(12-57)

**U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE**

Page 1 of 3 Pages

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Part 80, Licensing of Byproduct Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

Licensee		
1. Name	United Aircraft Corporation Pratt & Whitney Aircraft Division	3. License number 9-8351-1 (D64) I-H
2. Address	Florida Research & Development Center West Palm Beach, Florida	4. Expiration date April 30, 1964
		5. Reference No.
6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
A. Strontium 90	A. Sealed source (Nuclear- Chicago Corp. Model RG-32)	A. 10 millicuries

9. Authorized use

A. To be used in a Central Scientific Company Model 27630 beta ray spectrometer.

CONDITIONS

- 10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
- 15. The licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards For Protection Against Radiation".
- 19. Byproduct material shall be used by, or under the supervision of,
B. C. Thomas.
- 26. The licensee shall not open or remove sealed sources containing by-product material from the Beta Ray Spectrometer.

(See page 2)

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE

Page 2 of 3 Pages

Supplementary Sheet

License Number 9-8351-1
(D64)

CONDITIONS

31. A. Each sealed source containing byproduct material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made six months prior to the transfer, the sealed source shall not be put into use until tested.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of removable contamination on the source. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within five days of the test with the Director, Division of Licensing and Regulation, U. S. Atomic Energy Commission, Washington 25, D. C., describing the equipment involved, the test results and the corrective action taken. A copy of such report shall also be sent to the Director of the appropriate Regional Office, Division of Compliance, U. S. Atomic Energy Commission:

Region I, Division of Compliance, USAEC, 376 Hudson Street,
New York 14, New York

Region II, Division of Compliance, USAEC, 50 Seventh Street,
Northeast, Atlanta 23, Georgia

Region III, Division of Compliance, USAEC, 9800 South Cass
Avenue, Argonne, Illinois

Region IV, Division of Compliance, USAEC, P. O. Box 15266,
Denver 15, Colorado

Region V, Division of Compliance, USAEC, 2111 Bancroft Way,
Berkeley 4, California

(See page 3)

FORM AEC-374A
(12-57)

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE

Page 3 of 3 Pages

Supplementary Sheet

License Number 9-8351-1
(D64)

CONDITIONS

31. (Continued)

D. Tests for leakage and/or contamination shall be performed by Central Scientific Company, Tracerlab, Incorporated or by other persons specifically authorized by the Commission to perform such services.

43. Except as specifically provided otherwise by this license, the licensee shall possess and use byproduct material described in Items 6, 7 and 8 of this license in accordance with statements, representations and procedures contained in application dated April 5, 1962.

For the U. S. Atomic Energy Commission

Original Signed by
Robert E. Brinkman

by Isotopes Branch

Division of Licensing and Regulation
Washington 25, D. C.

Date JUN 4 - 1962

FORM AEC-374
(1957)

AVIATION
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U.S. ATOMIC ENERGY COMMISSION

PRODUCT MATERIAL LICENSE

AEC-3151-1, AMENDMENT NO. 1
(456)

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Part 30, Licensing of Byproduct Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. Name United Aircraft Corporation Pratt & Whitney Aircraft Division</p> <p>2. Address Florida Research & Development Center West Palm Beach, Florida</p>	<p>In accordance with application dated January 29, 1964, ✓</p> <p>3. License number AEC-3151-1 is amended on its entirety to read as follows:</p> <p>4. Expiration date January 31, 1966</p> <p>5. Reference No. I-14</p>
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<p>6. Byproduct material (element and mass number)</p> <p>A. Strontium 90 (see page 2)</p>	<p>7. Chemical and/or physical form</p> <p>A. Sealed source (nuclear-Chicago Corp. Model NC-2) (see page 2)</p>	<p>8. Maximum amount of radioactivity which licensee may possess at any one time</p> <p>A. 1 source not to exceed 10 milliraves (see page 2)</p>
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9. Authorized use

A. **It to be used on a General Scientific Company Model 2763 Beta ray spectrometer.**

B. **Development of rocket ignition systems.**

CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
11. The licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation."
12. Byproduct material shall be used by, or under the supervision of, **H. J. Thomas.**
13. Sealed sources shall not be opened by the licensee.
14. Sealed sources shall not be removed from the Beta Ray Spectrometer by the licensee.
15. A. Each sealed source containing byproduct material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made six months prior to the transfer, the sealed source shall not be put into use until tested.

(see page 2)

FORM AEC-74B
(10-63)

U. S. ATOMIC ENERGY COMMISSION

MATERIAL LICENSE

Supplementary Sheet

Continued From Page 1

License Number 9-3351-1
(A65)

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ATTACHMENT NO. 1

- | | | |
|---|-------------------------------------|---|
| 6. Byproduct material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum amount of radioactivity which licensee may possess at any one time |
| D. Rytton 05 | E. Sealed sources (spark gap tubes) | B. ^{Sealed} 25 sources not to exceed 30 microcuries per tube |

CONDITIONS

15. Continued:

- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
 - C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the test with the Director, Division of Licensing and Regulation, U. S. Atomic Energy Commission, Washington 25, D. C., describing the equipment involved, the test results, and the corrective action taken. A copy of such report shall also be sent to the Director, Region II, Division of Compliance, USACE, 50 Seventh Street, Northeast, Atlanta 2, Georgia.
 - D. Tests for leakage and/or contamination shall be performed by Central Scientific Company, Incorpoled, Incorporated, or by other persons specifically authorized by the Commission to perform such services.
16. Except as specifically provided otherwise by this license, the licensee shall possess and use byproduct material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in applications dated April 9, 1962, and January 29, 1963.

Date FEB 13 1964

For the U. S. Atomic Energy Commission
Original Signed by
Robert E. Brinkman

by Iestenes Drazich
Division of Licensing and Regulation
Washington 25, D. C.

FORM FSBH-RAD-110
(7-64)Page 1 of 3 PagesState of Florida
RADIOACTIVE MATERIALS LICENSE

Pursuant to Chapter 290, Florida Statutes, and Division 170J, Florida Administrative Code, Control of Radiation Hazards, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Florida State Board of Health now or hereafter in effect and to any conditions specified below.

Licensee		3. License number	90 - 1 (A66)
1. Name	United Aircraft Corporation Fratt & Whitney Aircraft Division Florida Research and Development Center West Palm Beach, Florida	4. Expiration date	January 31, 1966
2. Address		This license replaces License Number	
		5. Reference number	9-8351-1
6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time	
A. Strontium 90 (See page 2)	A. Sealed Source (Nuclear-Chicago Corp. Model RG-32) (See page 2)	A. One source not to exceed 10 millicuries (See page 2)	
9. Authorized use			
A. To be used in a Central Scientific Company Model 27630 Beta Ray Spectrometer. (See page 2)			

CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
11. The licensee shall comply with the provisions of Division 170J, Florida Administrative Code, "Rules and Regulations for Control of Radiation Hazards."
12. Radioactive material described in Items 6, 7, and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:
- A. and B. Strontium 90 and krypton 83 sealed sources shall be used by, or under the supervision of, B. C. Thomas.
- C. Cobalt 60 sealed sources shall be used by, or under the supervision of, P. J. Lawson.
- D. Thoriated nickel shall be used by, or under the supervision of J. F. Johnson.

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FORM FSBH-RAD-1105
(7-64)

Page 2 of 3 Pages

License Number 90 - 1

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

(A66)

- | | | |
|---|--|--|
| 6. Radioactive material
(element and mass
number) | 7. Chemical and/or physical form | 8. Maximum quantity
licensee may possess
at any one time |
| B. Krypton 85 | B. Sealed Sources
(Spark Gap Tubes) | B. 25 sources not
to exceed 30
microcuries per
tube |
| C. Cobalt 60 | C. Sealed Source
(Tracerlab, Inc.
Model R-31) | C. One source not to
exceed 1 milli-
curie |
| D. Thorium 232 | D. Thoriated Nickel
(2% thorium oxide
by volume) | D. 100 pounds of
thorium oxide |

9. Authorized use

- B. Development of rocket ignition systems.
- C. Calibration of radiological instruments.
- D. Evaluation of thoriated nickel as a potential material for use in the manufacture of engine components.

CONDITIONS

- 13. Sealed sources shall not be opened by the licensee.
- 14. The Model RG-32 sealed source shall not be removed from the Beta Ray Spectrometer by the licensee.

See page 3

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License Number 90 - 1

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

(A66)

CONDITIONS

- 15. A. Each sealed source containing radioactive material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made six months prior to the transfer, the sealed source shall not be put into use until tested.
 - B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the State Board of Health.
 - C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with State Board of Health regulations. A report shall be filed within 5 days of the test with the Director, Division of Radiological and Occupational Health, Florida State Board of Health, P.O. Box 210, Jacksonville, Florida 32201, describing the equipment involved, the test results, and the corrective action taken.
 - D. Tests for leakage and/or contamination shall be performed by Central Scientific Company, Tracerlab, Incorporated, or by other persons specifically authorized by the State Board of Health to perform such services.
16. Except as specifically provided otherwise by this license, the licensee shall possess and use radioactive material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated April 5, 1962, January 29, 1964, and October 20, 1964.

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FOR THE FLORIDA STATE BOARD OF HEALTH

Date NOV 23 1964

Original Signed by
by Charles E. Roessler
Division of Radiological and
Occupational Health
Jacksonville, Florida 32201

FORM FSBH-RAD-1105-
(7-64)

Page 1 of 2 Pages

License Number 90-1

(A66)

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Amendment No. 1

United Aircraft Corporation
Pratt and Whitney Aircraft Division
Florida Research and Development Center
West Palm Beach, Florida

In accordance with application dated September 30, 1964, License No. 90-1
is amended as follows:

To add:

- | | | |
|---|--|--|
| 6. Radioactive material
(element and mass
number) | 7. Chemical and/or physical form | 8. Maximum quantity
licensee may possess
at any one time |
| E. Lead 210
(Radium D) | E. Sealed Sources (Franklin GNO
Corporation Models 130-S) | E. 500 microcuries
total (6 sealed
sources of 50 micro-
curies each and one
sealed source of 200
microcuries) |

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9. Authorized use

E. To be used with Franklin GNO Corporation Model 130 Airfoil Wall Thickness Gauge for
measurement of thickness of material.

See page 2

FORM FSBH-RAD-110S
(7-64)

Page 2 of 2 Pages

License Number 90-1
(A66)

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

CONDITIONS

- 12. E. Lead 210 sealed sources shall be used by, or under the supervision of, Gordon G. Duncan.

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NOV 30 1984

Date _____

FOR THE FLORIDA STATE BOARD OF HEALTH

by Robert J. Williams

Division of Radiological and
Occupational Health
Jacksonville, Florida 32201

FORM FSBH-RAD-110
(7-64)

Page 1 of 3 Pages

State of Florida
RADIOACTIVE MATERIALS LICENSE No. 90 - 1 AMENDMENT NO. 3
 (ASB) F 70

Pursuant to Chapter 290, Florida Statutes, and Division 170J, Florida Administrative Code, Control of Radiation Hazards, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Florida State Board of Health now or hereafter in effect and to any conditions specified below.

Licensee		In accordance with application dated December 14, 1965, signed by H. L. Davin	
1. Name United Aircraft Corporation Pratt & Whitney Aircraft Division Florida Research & Development Center State Road 710 and Pratt & Whitney		3. License number 90 - 1 is hereby amended in its entirety to read as follows:	
2. Address Road West Palm Beach, Florida		4. Expiration date January 31, 1968	
6. Radioactive material (element and mass number) (See page 2)		7. Chemical and/or physical form (See page 2)	8. Maximum quantity licensee may possess at any one time (See page 2)

9. Authorized use
(See page 2)

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CONDITIONS

- 10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
- 11. The licensee shall comply with the provisions of Division 170J, Florida Administrative Code, "Rules and Regulations for Control of Radiation Hazards."
- 12. Radioactive materials described in Items 6, 7, and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:
 A., B., and C. Strontium 90, Krypton 85, and Cobalt 60 sealed sources shall be used by, or under the supervision of P. J. Lawson.
 D. Thoriated nickel shall be used by, or under the supervision of J. F. Johnson.
 E. through J. Lead 210, Thallium 204, Radium D+E, Strontium 90, Rhodium 106, Promethium 147 sealed sources shall be used by, or under the supervision of Gordon G. Duncan.
(See page 2)

License Number 90 - 1
(A68)

State of Florida
**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

AMENDMENT NO. 3

- | | | |
|---|--|---|
| 6. Radioactive material
(element and mass
number) | 7. Chemical and/or physical form | 8. Maximum quantity
licensee may possess
at any one time |
| A. ✓ Strontium 90 | A. ✓ Sealed Source (Nuclear-Chicago
Corp. Model RG-32) | A. ✓ One source not to exceed
10 millicuries |
| B. ✓ Krypton 85 | B. ✓ Sealed Source (Spark Gap
Tubes) | B. ✓ Fifty sources not to
exceed 30 microcuries
per tube |
| C. ✓ Cobalt 60 | C. ✓ Sealed Source (Tracerlab, Inc.
Model R-31) | C. ✓ One source not to exceed
1 millicurie |
| D. ✓ Thorium 232 | D. ✓ Thoriated Nickel (2% thorium
oxide by volume) | D. ✓ 200 pounds of thorium
oxide. |
| E. ✓ Lead 210 (Radium D) | E. ✓ Sealed Sources (Franklin GMD
Corp. Models 130-S) | E. ✓ Five sources of 0.3
millicurie each
One source of 100
microcuries
One source of 120
microcuries |
| F. ✓ Thallium 204 | F. ✓ Sealed Source (Minnesota
Mining & Manufacturing Co.
Model No. 3D9A) | F. ✓ 50 microcuries |
| G. ✓ Radium D+E | G. ✓ Sealed Source (Minnesota
Mining & Manufacturing Co.
Model No. 3D9B) | G. ✓ 30 microcuries |
| H. ✓ Strontium 90 | H. ✓ Sealed Source (Minnesota
Mining & Manufacturing Co.
Model No. 3D1J) | H. ✓ 3 microcuries |
| I. Rhodium 106 | I. ✓ Sealed Source (Minnesota
Mining & Manufacturing Co.
Model No. 3D9C) | I. ✓ 20 microcuries |

(See page 3)

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FORM FSBH/RAD-1105
(7-64)

Page 3 of 3 Pages

License Number 90 - 1
(A68)

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 9

6. Radioactive material
(element and mass
number)

7. Chemical and/or physical form

8. Maximum quantity
licensee may possess
at any one time

J. Promethium 147

J. Sealed Source (Minnesota
Mining & Manufacturing Co.
Model No. 3D2A)

J. 50 microcuries

9. Authorized use

- A. To be used in a Central Scientific Company Model 27630 Beta Ray Spectrometer.
- B. Development of rocket ignition systems.
- C. Calibration of radiological instruments.
- D. Evaluation of thoriated nickel as a potential material for use in the manufacture of engine components.
- E. To be used with Franklin GND Corporation Model 130 Airfoil Wall Thickness Gauge for measurement of thickness of material.
- F. through J. To be used with Twin City Testing Corporation Beta-Scope Model No. BX-4 for measurement of thickness of plating.

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MAR 28 1966

FOR THE FLORIDA STATE BOARD OF HEALTH

Original Signed by
Thomas W. Harris

Date

by

Division of Radiological and
Occupational Health
Jacksonville, Florida 32201

FORM FSBH-RAD-1105
(7-64)

Page 1 of 1 Pages

License Number 90 - 1
(A68)

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET **AMENDMENT NO. 5**

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 and Pratt & Whitney Road
West Palm Beach, Florida

In accordance with application dated June 16, 1966, signed by E. L. Davis, State of Florida Radioactive Materials License No. 90 - 1 is hereby amended as follows:

TO ADD:

- | | | |
|---|--|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| K. Hydrogen 3 | K. Sealed Source (Microtek Instruments, Inc. Model No. 739310) | K. 130 millicuries |

9. Authorized use

K. To be used in Research Specialist Gas Chromatograph Model 600 series module.

TO CHANGE CONDITION 12 TO READ:

12. Radioactive material described in Items 6, 7, and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:
- A., B., C., and K. Strontium 90, Krypton 85, Cobalt 60, and Hydrogen 3 sealed sources shall be used by or under the supervision of, F. J. Lawson.
 - D. Thoriated nickel shall be used by, or under the supervision of, J. F. Johnson.
 - E. through J. Lead 210, Thallium 204, Radium D+E, Strontium 90, Rhodium 106, and Promethium 147 sealed sources shall be used by, or under the supervision of, Gordon G. Duncan.

TO ADD CONDITIONS 13 AND 14:

- 13. Sealed sources containing Hydrogen 3 shall not be removed from the detector cells by the licensee.
- 14. Detector cells containing Hydrogen 3 foils shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.

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Date JUN 24 1966

FOR THE FLORIDA STATE BOARD OF HEALTH

Original Signed by
Thomas W. Harris

by _____
Division of Radiological and
Occupational Health
Jacksonville, Florida 32201

FORM FSBH-RAD-1105
(7-64)

License Number 90 - 1
(A70)

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 6

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 and Pratt & Whitney Road
West Palm Beach, Florida 33402

In accordance with application dated December 27, 1967, signed by E. L. Davis, State of Florida Radioactive Materials License No. 90 - 1 is hereby amended as follows:

The expiration date (Item 4) is extended from January 31, 1968, to January 31, 1970.

The symbol below the license number is changed from (A68) to (A70).

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FOR THE FLORIDA STATE BOARD OF HEALTH

Original Signed by
Thomas W. Harris

by _____
Division of Radiological Health
Jacksonville, Florida 32201

Date JAN 15 1968

FORM FSBH-RAD-110
(7-64)

Page 1 of 4 Pages

State of Florida

**RADIOACTIVE MATERIALS LICENSE NO. 90 - 1, AMENDMENT NO. 7
(A72)**

Pursuant to Chapter 290, Florida Statutes, and Division 170J, Florida Administrative Code, Control of Radiation Hazards, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Florida State Board of Health now or hereafter in effect and to any conditions specified below.

Licensee		With reference to application dated December 22, 1969.	
1. Name UNITED AIRCRAFT CORPORATION Pratt & Whitney Aircraft Division Florida Research & Development Center		3. License number 90 - 1 is hereby amended in its entirety to read as follows:	
2. Address State Road 710 & Pratt & Whitney Road West Palm Beach, Florida 33402		4. Expiration date January 31, 1972	
6. Radioactive material (element and mass number) (See page 2)		5. Reference number	
7. Chemical and/or physical form (See page 2)		8. Maximum quantity licensee may possess at any one time (See page 2)	
9. Authorized use (See page 3)			

CONDITIONS.

- 10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
- 11. The licensee shall comply with the provisions of Rules of State Board of Health, Control of Radiation Hazards, Chapter 170J-1, Florida Administrative Code.
- 12. Radioactive material described in Items 6, 7 and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:
 Items A, B, C, ~~and K~~ shall be used by, or under the supervision of, L. M. Hamill.
 Item D shall be used by, or under the supervision of, J. F. Johnson.
 Items E through J shall be used by, or under the supervision of, Gordon G. Duncan.

(See page 3)

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FORM FSBH-RAD-1105 (7-64)

License Number 90 - 1
(A72)

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 7

- | | | |
|---|---|---|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| ✓ A. Strontium 90 | ✓ A. One sealed source (Nuclear Chicago Corp. Model RG-32) | A. 10 millicuries |
| ✓ B. Krypton 85 | ✓ B. 50 sealed sources (spark gap tubes)
One source (American Atomic Association of Tucson Model SK 1090) | ✓ B. 158 microcuries (50 sources not to exceed 30 microcuries per tube; one source not to exceed 8 microcuries) |
| ✓ C. Cobalt 60 | ✓ C. One sealed source (Tracerlab, Inc. Model R-31) | C. 1 millicurie |
| ✓ D. Thorium 232 | ✓ D. Thoriated Nickel (2% Thorium Oxide by volume) | D. 200 pounds thorium oxide |
| ✓ E. Lead 210 (Radium D) | ✓ E. Five sealed sources, 300 microcuries each (Franklin Systems Model No. 130); one sealed source, 50 microcuries (Franklin Corp. Model No. 10); one sealed source, 100 microcuries (Franklin Systems Model No. 130); one sealed source, 120 microcuries (Franklin Systems Model No. 130). | E. 1.77 millicuries |
| ✓ F. Thallium 204 | <i>change</i> ✓ F. One sealed source (Minnesota Mining & Manufacturing Co. Model No. 3D9A) | F. 50 microcuries |
| ✓ G. Radium D & E | <i>change</i> ✓ G. One sealed source, 30 microcuries (MM&M Co. Model 3D9B); one sealed source, 20 microcuries (Twin City Testing Corp. pencil probe type DD-3). | G. 50 microcuries |

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(See page 3)

FORM FSBH-RAD-1105
(7-64)

Page 3 of 4 Pages

License Number: 90 - 1
(A72)

State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET
AMENDMENT NO. 7

6. Radioactive material
(element and mass
number)

7. Chemical and/or physical form

8. Maximum quantity
licensee may possess
at any one time

H. Strontium 90

change
H. One sealed source (MM&M Co.
Model No. 3D1J)

change
H. 3 microcuries

✓ I. Rhodium 106

change
I. One sealed source (MM&M Co.
Model 3D9C)

change
I. 20 microcuries

J. Promethium 147

change
J. One sealed source (MM&M Co.
Model No. 3D2A)

change
J. 50 microcuries

✓ K. Hydrogen 3

change
K. One sealed source (Microtek
Instruments, Inc. Model No.
739310)

change
K. 130 microcuries

9. Authorized use

- ✓ A. Development of and installation in rocket engines.
- ✓ B. Development of rocket ignition systems and standard for luminescence meter.
- ✓ C. Calibration of radiological instruments.
- ✓ D. Evaluation of Thoriated nickel as a potential material for use in the manufacture of engine components.
- ✓ E. To be used with Franklin GNO Corporation Model 130 Airfoil Wall Thickness Gauge for measurement of thickness of material.
- ✓ F. through J. To be used with Twin City Testing Corporation Beta-Scope Model No. NX4 for measurement of thickness of plating.
- ✓ K. To be used in Research Specialist Gas Chromatograph Model 600 series module.

CONDITIONS

- 13. Sealed sources containing Hydrogen 3 shall not be removed from the detector cells by the licensee.
- 14. Detector cells containing Hydrogen 3 foils shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.

(See page 4)

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FORM FSBH-RAD-1105
(7-64)

Page 4 of 4 Pages

License Number 90 - 1
(A72)

State of Florida
**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET
CONDITIONS**

AMENDMENT NO. 7

- 15. A. Each sealed source acquired from another person and containing radioactive material, other than Hydrogen 3, with a half-life greater than six months and in any form other than gas shall be tested for leakage and/or contamination prior to use. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, the sealed source shall not be put into use until tested.
- B. Surveys of sealed sources and sealed source storage containers shall be made at intervals not to exceed six months to insure the integrity of the containment. If there is indication of 0.005 microcurie or more of contamination, tests shall be made for removable contamination. Records of survey results shall be kept in units of microcuries and maintained for inspection by the Division of Health.
- C. Notwithstanding the periodic leak test required by this condition, any licensed sealed source containing radioactive material is exempt from periodic leak tests provided the quantity of radioactive material contained in the source does not exceed ten times the quantity specified for the radioactive material in Column 2 of 170J-1.49 of "Rules of State Board of Health, Chapter 170J-1, Control of Radiation Hazards."
- D. If the survey required by Subsection B of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source or source storage container from use and shall cause it to be decontaminated and repaired if necessary or to be disposed of in accordance with Division of Health regulations. If such action is required, a report shall be filed within five days of the survey with the Administrator, Radiological and Occupational Health Section, Division of Health, P. O. Box 210, Jacksonville, Florida 32201, describing the equipment involved, the test method used, the test results and the corrective action taken.

Best Copy Available

FOR THE FLORIDA STATE BOARD OF HEALTH

Original Signed by
Thomas W. Harris

by _____
Division of Radiological Health,
Jacksonville, Florida 32201

Date FEB 2 1970

STATE OF FLORIDA
 DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
 DIVISION OF HEALTH
 Post Office Box 210
 Jacksonville, Florida 32201

FORM RAD-110

Page 1 of 4 Pages

**RADIOACTIVE MATERIALS LICENSE NO. 90 - 1, AMENDMENT NO. 8
 (A72)**

Pursuant to Chapter 290, Florida Statutes, and Chapter 170J, Florida Administrative Code, Control of Radiation Hazards, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

With reference to letters dated March 25 and 31, 1970, signed by William R. Campbell,
 3. License number 90 - 1 is hereby amended in its entirety to read as follows:
 4. Expiration date January 31, 1972
 5. Reference number

Licensee
 1. Name UNITED AIRCRAFT CORPORATION
 Pratt & Whitney Aircraft Division
 Florida Research & Development Center
 2. Address State Road 710 & Pratt & Whitney Road
 West Palm Beach, Florida 33402

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Strontium 90	A. One sealed source (Nuclear-Chicago Corp. Model RG-32)	A. 10 millicuries
B. Krypton 85	B. 50 sealed sources (spark gap tubes); one source (American Atomic Association of Tucson Model SK 1090)	B. 158 microcuries (50 sources not to exceed 30 microcuries per tube, one source not to exceed 8 microcuries)
C. Cobalt 60	C. One sealed source (Tracerlab, Inc. Model R-31)	C. 1 millicurie
D. Thorium 232	D. Thoriated Nickel (2% Thorium Oxide by volume)	D. 200 pounds thorium oxide
E. Lead 210 (Radium D)	E. Five sealed sources, 300 microcuries each (Franklin Systems Model No. 130) one sealed source, 50 microcuries (Franklin Corp. Model No. 10); one sealed source, 100 microcuries (Franklin Systems Model No. 130); one sealed source, 120 microcuries (Franklin Systems Model No. 130).	E. 1.77 millicuries

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(See page 2)

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

FORM RAD-1105

Page 2 of 4 Pages

License Number 90 - 1
(A72)

AMENDMENT NO. 8

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

- | | | |
|---|--|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| F. Thallium 204 | F. Sealed sources; one sealed source, 50 microcuries (Minnesota Mining & Manufacturing Company Model No. 3D9A), one sealed source, 50 microcuries (MM&M Co. Serial No. F1043) | F. 100 microcuries |
| G. Radium D & E | G. Sealed sources; one sealed source, 20 microcuries (MM&M Co. Model 3D9B), one sealed source, 20 microcuries (Twin City Testing Corp. pencil probe type DD-3), one sealed source, 20 microcuries (MM&M Co. Serial No. F224) | G. 60 microcuries |
| H. Strontium 90 | H. Sealed sources; one sealed source, 5 microcuries (MM&M Co. Model No. 3D1J), one sealed source, 5 microcuries (MM&M Co. Serial No. F300) | H. 10 microcuries |
| I. Rhodium 106 | I. One sealed source (MM&M Co. Model 3D9C) | I. 30 microcuries |
| J. Promethium 147 | J. Sealed sources; one sealed source, 600 microcuries (MM&M Co. Model No. 3D2A), one sealed source, 600 microcuries (MM&M Co. Serial No. F1282) | J. 1200 microcuries |
| K. Hydrogen 3 | K. One sealed source (Microtek Instruments, Inc. Model No. 739310) | K. 130 microcuries |
| L. Krypton 85 | L. One sealed source (American Atomics Corp. Model SK1075) | L. 200 microcuries |

(See page 3)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

FORM RAD-1105

Page 3 of 4 Pages

License Number 90 - 1
(A72)

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 8

9. Authorized use

- A. Development of and installation in rocket engines.
- B. Development of rocket ignition systems and standard for luminescence meter.
- C. Calibration of radiological instruments.
- D. Evaluation of Thoriated nickel as a potential material for use in the manufacture of engine components.
- E. To be used with Franklin GNO Corporation Model 130 Airfoil Wall Thickness Gauge for measurement of thickness of material.
- F. through J. To be used with Twin City Testing Corporation Beta-Scope Model No. NX4 for measurement of thickness of plating.
- K. To be used in Research Specialist Gas Chromatograph Model 600 series module.
- L. Development of rocket ignition systems and standard for luminescence meter.

CONDITIONS

- 10. The authorized place of use is the licensee's address stated in Item 2 above.
- 11. The licensee shall comply with the provisions of Rules of State Board of Health, Control of Radiation Hazards, Chapter 170J-1, Florida Administrative Code.
- 12. Radioactive material described in Items 6, 7 and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:

 - Items A, B, C, K and L shall be used by, or under the supervision of, L. M. Hamill.
 - Item D shall be used by, or under the supervision of, J. F. Johnson.
 - Items E through J shall be used by, or under the supervision of, Gordon G. Duncan.
- 13. Sealed sources containing Hydrogen 3 shall not be removed from the detector cells by the licensee.
- 14. Detector cells containing Hydrogen 3 foils shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.
- 15. A. Each sealed source acquired from another person and containing radioactive material, other than Hydrogen 3, with a half-life greater than six months and in any form other than gas shall be tested for leakage and/or contamination prior to use. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, the sealed source shall not be put into use until tested.

(See page 4)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 4 of 4 Pages

License Number 90 - 1
(A72)

AMENDMENT NO. 8

FORM RAD-1105

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

CONDITIONS

- 15. B. Surveys of sealed sources and sealed source storage containers shall be made at intervals not to exceed six months to insure the integrity of the containment. If there is indication of 0.005 microcurie or more of contamination, tests shall be made for removable contamination. Records of survey results shall be kept in units of microcuries and maintained for inspection by the Division of Health.
- C. Notwithstanding the periodic leak test required by this condition, any licensed sealed source containing radioactive material is exempt from periodic leak tests provided the quantity of radioactive material contained in the source does not exceed ten times the quantity specified for the radioactive material in Column 2 of 170J-1.49 of "Rules of State Board of Health, Chapter 170J-1, Control of Radiation Hazards."
- D. If the survey required by Subsection B of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source or source storage container from use and shall cause it to be decontaminated and repaired if necessary or to be disposed of in accordance with Division of Health regulations. If such action is required, a report shall be filed within five days of the survey with the Administrator, Radiological and Occupational Health Section, Division of Health, P. O. Box 210, Jacksonville, Florida 32201, describing the equipment involved, the test method used, the test results and the corrective action taken.

Best Copy Available

Date APR 22 1970

FOR THE DIVISION OF HEALTH
Original Signed By
Thomas W. Harris
by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages

License Number 90 - 1
(A72)

AMENDMENT NO. 9

FORM RAD-1105

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to memorandum dated April 28, 1970, signed by L. M. Hamill and submitted by W. R. Campbell, State of Florida Radioactive Materials License No. 90 - 1 is hereby amended as follows:

TO CHANGE ITEMS 6. D. AND 7. D. TO READ:

- | | | |
|--|---|---|
| 6. Radioactive material
(element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| B. Krypton 85 | B. 50 sealed sources (spark gap tubes); one source (American Atomic Association of Tucson Model SK 1090) | B. 9.5 millicuries (50 sources not to exceed 30 microcuries per tube; one source not to exceed 8 millicuries) |
| D. Thorium 232 | D. Thoriated nickel (2% thorium oxide by volume) and thoriated cobalt (20% thorium oxide by volume) <i>plus 100000?</i> | D. 200 pounds thorium oxide. |

Best Copy Available

Date MAY 20 1970

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris
by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages

License Number 90 - 1
(A72)

AMENDMENT NO. 10

FORM RAD-1105

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to letter dated July 6, 1970, signed by William R. Campbell, State of Florida
Radioactive Materials License No. 90 - 1 is hereby amended as follows:

TO CHANGE ITEM 7. D. TO READ:

7. Chemical and/or physical form

D. Thoriated nickel (2% thorium
oxide by volume) and thoriated
cobalt (2% thorium oxide by
volume)

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Available

Date JUL 27 1970

FOR THE DIVISION OF HEALTH

Original Signed by

Thomas W. Harris

by

Radiological and Occupational Health Section

Jacksonville, Florida 32201

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

FORM RAD-110

Page 1 of 4 Pages

RADIOACTIVE MATERIALS LICENSE NO. 90 - 1, AMENDMENT NO. 11
(A72)
A. 14

Pursuant to Chapter 290, Florida Statutes, and Chapter 170J, Florida Administrative Code, Control of Radiation Hazards, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. Name UNITED AIRCRAFT CORPORATION Pratt & Whitney Aircraft Division Florida Research & Development Center</p> <p>2. Address State Road 710 & Pratt & Whitney Rd. West Palm Beach, Florida 33402</p>	<p><i>With reference to letter dated November 20, 1970, signed by William R. Campbell,</i></p> <p>3. License number 90 - 1 is hereby amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date January 31, 1972</p> <hr/> <p>5. Reference number</p>
--	---

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Strontium 90	A. One sealed source (Nuclear-Chicago Corp. Model RG-32)	A. 10 millicuries
B. Krypton 85	B. 50 sealed sources (spark gap tubes); one source (American Atomic Association of Tucson Model SK 1090)	B. 9.5 millicuries (50 sources not to exceed 30 microcuries per tube one source not to exceed 8 millicuries)
C. Cobalt 60	C. One sealed source (Tracerlab, Inc. Model R-31)	C. 1 millicurie
D. Thorium 232	D. Thoriated nickel (2% thorium oxide by volume) and thoriated cobalt (2% thorium oxide by volume)	D. 200 pounds thorium oxide
E. Lead 210 (Radium D)	E. Five sealed sources, 300 microcuries each (Franklin Systems Model No. 130), one sealed source, 50 microcuries (Franklin Corp. Model No. 10); one sealed source, 100 microcuries (Franklin Systems Model No. 130); one sealed source, 120 microcuries (Franklin Systems Model No. 130)	E. 1.77 millicuries

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(See page 2)

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 2 of 4 Pages

License Number 90 - 1
(872)

AMENDMENT NO. 11

FORM RAD-1105

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

- 6. Radioactive material (element and mass number)
- F. Thallium 204
- G. Radium D & E
- H. Strontium 90
- I. Rhodium 106
- J. Promethium 147
- K. Hydrogen 3
- L. Krypton 85
- 7. Chemical and/or physical form
- F. Sealed sources; one sealed source, 50 microcuries (Minnesota Mining & Manufacturing Company Model No. 3D9A); one sealed source, 50 microcuries (MM&M Co. Serial No. F1043)
- G. Sealed sources; one sealed source, 20 microcuries (MM&M Co. Model 3D9B); one sealed source, 20 microcuries (Twin City Testing Corp. pencil probe type DD-3); one sealed source, 20 microcuries (MM&M Co. Serial No. F224)
- H. Sealed sources; one sealed source, 5 microcuries (MM&M Co. Model No. 3D1J); one sealed source, 5 microcuries (MM&M Co. Serial No. F300)
- I. One sealed source (MM&M Co. Model 3D9C)
- J. Sealed sources; one sealed source, 600 microcuries (MM&M Co. Model No. 3D2A); one sealed source, 600 microcuries (MM&M Co. Serial No. F1282)
- K. One sealed source (Microtek Instruments, Inc. Model No. 739310)
- L. One sealed source (American Atomica Corp. Model SK1075)
- 8. Maximum quantity licensee may possess at any one time
- F. 100 microcuries
- G. 60 microcuries
- H. 10 microcuries
- I. 30 microcuries
- J. 1200 microcuries
- K. 130 microcuries
- L. 200 microcuries

See page 14

(See page 3)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

FORM RAD-1105

Page 3 of 4 Pages

License Number 90 - 1
(A72)

AMENDMENT NO. 11

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

- | | | |
|---|--|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| H. Promethium 147 | H. Two sealed sources, 10 microcuries each (Unit Process Assemblies, Inc. Model HH-2B, Serial No. 5399); one sealed source, 10 microcuries (Unit Process Assemblies, Inc. Model HH-9, Serial No. 5547) | H. 30 microcuries |
| I. Strontium 90 | I. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial No. 9949) | I. 10 microcuries |
| J. Radium D | J. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial No. 8766) | J. 10 microcuries |
| K. Thallium 204 | K. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial No. 7352) | K. 50 microcuries |

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9. Authorized use

- A. Development of and installation in rocket engines.
- B. Development of rocket ignition systems and standard for luminescence meter.
- C. Calibration of radiological instruments.
- D. Evaluation of Thoriated nickel as a potential material for use in the manufacture of engine components.
- E. To be used with Franklin GND Corporation Model 130 Airfoil Wall Thickness Gauge for measurement of thickness of material.
- F. through J. To be used with Twin City Testing Corporation Beta-Scope Model No. NX4 for measurement of thickness of plating.
- K. To be used in Research Specialist Gas Chromatograph Model 600 series module.
- L. Development of rocket ignition systems and standard for luminescence meter.
- M. through P. To be used with a Micro-Dens ND-3 unit in inspection work.

CONDITIONS

- 10. The authorized place of use is the licensee's address stated in Item 2 above.
- 11. The licensee shall comply with the provisions of Rules of State Board of Health, Control of Radiation Hazards, Chapter 170J-1, Florida Administrative Code.

(See page 4)

James H. [Signature]

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 4 of 4 Pages

License Number 90 - 1
(A72)

AMENDMENT NO. 11

FORM RAD-1105

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET
CONDITIONS

12. Radioactive material described in Items 6, 7 and 8 of this license shall be used by or under the supervision of, the appropriate individual indicated below:

Items A, B, C, K and L shall be used by, or under the supervision of, L. M. Hamill.
Item D shall be used by, or under the supervision of, J. F. Johnson.
Items E through J shall be used by, or under the supervision of, Gordon G. Duncan.
Items M through P shall be used by, or under the supervision of, Gordon G. Duncan.

13. Sealed sources containing hydrogen 3 shall not be removed from the detector cells by the licensee.

14. Detector cells containing hydrogen 3 foils shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.

15. A. Each sealed source acquired from another person and containing radioactive material, other than hydrogen 3, with a half-life greater than six months and in any form other than gas shall be tested for leakage and/or contamination prior to use. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, the sealed source shall not be put into use until tested.

B. Surveys of sealed sources and sealed source storage containers shall be made at intervals not to exceed six months to insure the integrity of the containment. If there is indication of 0.005 microcurie or more of contamination, tests shall be made for removable contamination. Records of survey results shall be kept in units of microcuries and maintained for inspection by the Division of Health.

C. Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

D. If the survey required by Subsection B of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source or source storage container from use and shall cause it to be decontaminated and repaired if necessary or to be disposed of in accordance with Division of Health regulations. If such action is required, a report shall be filed within five days of the survey with the Administrator, Radiological and Occupational Health Section, Division of Health, P. O. Box 210, Jacksonville, Florida 32201, describing the equipment involved, the test method used, the test results and the corrective action taken.

Best Copy Available

Date DEC 30 1970

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris
by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages

License Number 90 - 1
(A72)

AMENDMENT NO. 12

FORM RAD-1105

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Rd.
West Palm Beach, Florida 33402

With reference to letters dated September 27, 1971 and September 30, 1971, signed by William R. Campbell, State of Florida Radioactive Materials License No. 90 - 1 is hereby amended as follows:

TO CHANGE ITEM 7. C. TO READ:

7. Chemical and/or physical form

C. One sealed source (International Chemical and Nuclear Corporation Model No. 375, Serial No. 675)

TO ADD:

6. Radioactive material (element and mass number)

Q. Promethium 147

7. Chemical and/or physical form

Q. Sealed source (Unit Process Assemblies, Inc. Model HH-3X, Serial No. 5592)

8. Maximum quantity licensee may possess at any one time

Q. 50 microcuries

9. Authorized use

Q. To be used with a Micro-Derm MD-3 unit in inspection work.

Best Copy Available

Date OCT 22 1971

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris

by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201

FORM RAD-1105

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages

License Number 90 - 1
(A74)

AMENDMENT NO. 14

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Rd.
West Palm Beach, Florida 33402

With reference to letter dated August 18, 1972, signed by William R. Campbell, State of Florida Radioactive Materials License No. 90 - 1 is hereby amended as follows:

TO CHANGE ITEMS 7. F. AND 8. F. TO READ:

- 7. Chemical and/or physical form
- 8. Maximum quantity licensee may possess at any one time
- F. Sealed source (Minnesota Mining & Manufacturing Company Model No. 3D9A)
- F. 50 microcuries

TO CHANGE CONDITION 11 TO READ:

- 11. The licensee shall comply with the provisions of Rules, Department of Health and Rehabilitative Services, Division of Health, Control of Radiation Hazards, Chapter 10D-56, Florida Administrative Code.

Best Copy Available

Date: AUG 23 1972

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris
by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages

License Number 90 - 1
(A74)

AMENDMENT NO. 15

FORM RAD-1103

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Rd.
West Palm Beach, Florida 33402

With reference to letter dated March 13, 1973 signed by William R. Campbell, State of Florida Radioactive Materials License No. 90 1 is hereby amended as follows:

TO CHANGE CONDITION 12 TO READ:

CONDITIONS

12. Radioactive material described in Items 6, 7 and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:

- Items A, B, C, K and L shall be used by, or under the supervision of, E. P. Granberry, Jr.
- Item D shall be used by, or under the supervision of, J. F. Johnson.
- Items E through J shall be used by, or under the supervision of, Gordon G. Duncan.
- Items M through P shall be used by or under the supervision of, Gordon G. Duncan.

Best Copy Available

Date MAR 15 1973

FOR THE DIVISION OF HEALTH

Original Signed by

Thomas W. Harris

by

Radiological and Occupational Health Section

Jacksonville, Florida 32201

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH

Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 5 Pages

FORM RAD-110

RADIOACTIVE MATERIALS LICENSE NO. 90 - 1, AMENDMENT NO. 16 (A76)

Pursuant to Chapter 290, Florida Statutes, and Chapter 10D-56, Florida Administrative Code, Control of Radiation Hazards, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

With reference to application dated Jan. 9, 1974, signed by E.V. Marshall, and letter dated Jan. 10, 1974, signed by William R. Campbell,
3. License number 90 - 1 is hereby amended in its entirety to read as follows:

Licensee

See Am #20

1. Name ~~UNITED AIRCRAFT CORPORATION~~
Pratt & Whitney Aircraft Division
2. Address Florida Research & Development Center
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

4. Expiration date **January 31, 1976**

5. Reference number

6. Radioactive material (element and mass number)

7. Chemical and/or physical form

8. Maximum quantity licensee may possess at any one time

~~A. Strontium 90~~

~~A. One sealed source (Nuclear-Chicago Corp. Model RG-32)~~

~~A. 10 millicuries~~

Deleted by Am #18

B. Krypton 85

B. 50 sealed sources (Spark Gap Tubes); One source (American Atomic Association of Tucson Model SK 1090)

B. 9.5 millicuries (50 sources not to exceed 30 microcuries per tube; one source not to exceed 9 millicuries)

C. Cobalt 60

C. One sealed source (ICN, Inc. Model 675)

C. 1 millicurie

D. Thorium 232

D. Thoriated Nickel (2% Thorium oxide by volume)
Thoriated Cobalt (2% Thorium oxide by volume)

D. 200 pounds Thorium oxide

E. Lead 210

E. One sealed source, 50 microcuries (Franklin Corp. Model No. 10)
One sealed source, 100 microcuries (Franklin Systems Model No. 130)
One sealed source, 120 microcuries (Franklin Systems Model No. 130)

E. 270 microcuries

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(See page 2)

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

FORM RAD-110S

Page 2 of 5 Pages

License Number 90 - 1
(A76)

AMENDMENT NO. 16

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

6. Radioactive material
(element and mass
number)

7. Chemical and/or physical form

8. Maximum quantity
licensee may possess
at any one time

F. Thallium 204

F. One sealed source, 50 micro-
curies (Minnesota Mining &
Manufacturing Company Model
No. 3D9 A)

F. 50 microcuries

G. Radium D & E

G. Sealed sources
One sealed source, 20 micro-
curies (MM&M Co. Model 3D9B)
One sealed source, 20 micro-
curies (Twin City Testing Corp.
pencil probe type DD-3)
One sealed source, 20 micro-
curies (MM&M Co. Serial No.
F-279)
One sealed source, 20 micro-
curies (Twin City Testing Corp.
DD-3)

G. 80 microcuries

H. Strontium 90

H. Sealed sources
One sealed source, 5 micro-
curies (MM&M Co. Model No. 3D1J)
One sealed source, 5 microcuries
(MM&M Co. Serial No. F-300)

H. 10 microcuries

I. Rhodium 106

I. One sealed source (MM&M Co.
Model 3D9C)

I. 30 microcuries

J. Promethium 147

J. Sealed sources
One sealed source, 600 micro-
curies (MM&M Co. Model No. 3D2A)
One sealed source, 600 micro-
curies (MM&M Co. Serial No.
F1282)

J. 1200 microcuries

K. Hydrogen 3

K. One sealed source (Microtek
Instruments, Inc. Model No.
739310)

K. 130 microcuries

L. Krypton 85

L. One sealed source (American
Atomics Corp. Model SK1075)

L. 200 microcuries

(See page 3)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

FORM RAD-1105

Page 3 of 5 Pages

License Number 90 - 1
(A76)

AMENDMENT NO. 16

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

6. Radioactive material
(element and mass
number)

7. Chemical and/or physical form

8. Maximum quantity
licensee may possess
at any one time

M. Promethium 147

M. Two sealed sources
50 microcuries each (Unit
Process Assemblies, Inc.
Model HH-2B, Serial No. 5399)

M. 200 microcuries

N. Strontium 90

N. Sealed source (Unit Process
Assemblies, Inc. Model HH-3,
Serial No. 9949)

N. 10 microcuries

O. Radium D

O. Sealed source (Unit Process
Assemblies, Inc. Model HH-3,
Serial No. 8766)

O. 10 microcuries

P. Thallium 204

P. Sealed source (Unit Process
Assemblies, Inc. Model HH-3,
Serial No. 7352)

P. 50 microcuries

Q. Promethium 147

Q. One sealed source, 50 micro-
curies (Unit Process Assemblies,
Inc. Model HH-3X, Serial No.
5592)

Q. 50 microcuries

9. Authorized use

- ~~A. Development of and installation in rocket engines.~~ Deleted by Com. #18.
- B. Development of rocket ignition systems and standard for luminescence meter.
- C. Calibration of radiological instruments.
- D. Evaluation of Thoriated nickel and Thoriated Cobalt as a potential material for use in the manufacture of engine components.
- E. To be used with Franklin GNO Corporation Model 130 Airfoil Wall Thickness Gauge for measurement of thickness of material.
- F. through J. To be used with Twin City Testing Corporation Beta-Scope Model No. NX4 for measurement of thickness of plating.
- K. To be used in Research Specialist Gas Chromatograph Model 600 series module.
- L. Development of rocket ignition systems and standard for luminescence meter.
- M. through Q. To be used with a Micro-Derm MD-3 unit in inspection work.

(See page 4)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 4 of 5 Pages

License Number 90 - 1
(A76)

AMENDMENT NO. 16

FORM RAD-1105

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

CONDITIONS

- 10. The authorized place of use is the licensee's address stated in Item 2 above.
- 11. The licensee shall comply with the provisions of Rules, Department of Health and Rehabilitative Services, Division of Health, Control of Radiation Hazards, Chapter 10D-56, Florida Administrative Code.
- 12. Radioactive material described in Items 6, 7 and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:
 - Items A, B, C, K and L ^{add R} shall be used by, or under the supervision of, E. P. Granberry, Jr.
 - Item D shall be used by, or under the supervision of, Arthur R. Cox.
 - Items E through J and M through Q shall be used by, or under the supervision of, Rex M. Bell.
- 13. Sealed sources containing hydrogen 3 shall not be removed from the detector cells by the licensee.
- 14. Detector cells containing hydrogen 3 foils shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.
- 15. A. Each sealed source acquired from another person and containing radioactive material, other than hydrogen 3, with a half-life greater than six months and in any form other than gas shall be tested for leakage and/or contamination prior to use. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, the sealed source shall not be put into use until tested.
 B. Surveys of sealed sources and sealed source storage containers shall be made at intervals not to exceed six months to insure the integrity of the containment. If there is indication of 0.005 microcurie or more of contamination, tests shall be made for removable contamination. Records of survey results shall be kept in units of microcuries and maintained for inspection by the Division of Health.
 C. Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

(See page 5)

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STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

FORM RAD-1105

Page 5 of 5 Pages

License Number 90 - 1
(A76)

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 16

CONDITIONS

- 15. D. If the survey required by Subsection B of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source or source storage container from use and shall cause it to be decontaminated and repaired if necessary or to be disposed of in accordance with Division of Health regulations. If such action is required, a report shall be filed within five days of the survey with the Administrator, Radiological and Occupational Health Section, Division of Health, P. O. Box 210, Jacksonville, Florida 32201, describing the equipment involved, the test method used, the test results and the corrective action taken.

Best Copy Available

Date: JAN 15 1974

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris
by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

FORM RAD-1105

DIVISION OF HEALTH
Post-Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages

License Number 90 - 1
(A76)

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

AMENDMENT NO. 17

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to letter dated August 1, 1974, signed by Joseph D. Love, Department Counsel, State of Florida Radioactive Materials License No. 90 - 1 is hereby amended as follows:

TO ADD:

- | | | |
|--|--|--|
| 6. Radioactive material
(element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| R. Hydrogen 3 | R. Titanium Tritide Sealed Source
(Varian Instrument Div. Model No. 02-000220-00) | R. 250 millicuries |

9. Authorized use

R. To be used in Varian Trace Gas Analyzer Model No. 00-273120-00.

TO CHANGE CONDITION 12 TO READ:

CONDITIONS

~~12. Radioactive material described in Items 6, 7 and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:~~

Changed - see Com #18

~~Items A, B, C, K, L, and R shall be used by, or under the supervision of, E. P. Granberry, Jr.
Item D shall be used by, or under the supervision of, Arthur R. Cox.
Items E through J and M through Q shall be used by, or under the supervision of, Rex M. Ball.~~

Best Copy Available

Date AUG 7 - 1974

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris
by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201

FORM RAD-1105

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages
License Number 90-1
(A76)

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 18

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to letters dated January 13 and 23, 1975, signed by William R. Campbell, Department Assistant Counsel, State of Florida Radioactive Materials License No. 90-1, is hereby amended as follows:

TO DELETE ITEMS 6A, 7A, 8A and 9A.

TO CHANGE ITEM 12 TO READ:

12. Radioactive material described in Items 6, 7, and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:

Items B, C, K and L shall be used by, or under the supervision of, E. P. Granberry, Jr.
Item D shall be used by, or under the supervision of, Arthur R. Cox.
Item E through J and M through Q shall be used by, or under the supervision of, Rex M. Bell.

Best Copy Available

E. Charlton Prather, M.D., M.P.H.
Director, Division of Health

Original Signed By:
B. C. Warren

Date JAN 30 1975

by

Radiological and Occupational Health Section
Jacksonville, Florida 32201

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages
License Number 90-1
~~(A76)~~
AMENDMENT NO. 19

FORM RAD-1105

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

UNITED AIRCRAFT CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to letters dated February 20, 1975, and February 10, 1975, signed by William B. Campbell, Department Assistant Counsel, State of Florida Radioactive Materials License No. 90-1, is hereby amended as follows:

TO ADD:

- | | | |
|--|---|--|
| 6. Radioactive material
(element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| S. Nickel 63 | S. Sealed source (Perkin Elmer Corporation) | S. 15 millicuries |
9. Authorized use
- S. To be used in Perkin Elmer Corporation, gas chromatograph, model number 3920.

TO CORRECT ITEM 12 TO READ:

12. Radioactive material described in Items 6, 7, and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:
- Items B, C, K, L, and R shall be used by, or under the supervision of, E. P. Granberry, Jr.
 Item D shall be used by, or under the supervision of, Arthur R. Cox.
 Item E through J and M through Q shall be used by, or under the supervision of, Rex M. Bell.
 Item S, shall be used by, or under the supervision of E. P. Granberry, Jr.

Best Copy Available

Date MAR 3 - 1975


E. Charlton Prather, M.D., M.P.H.
Director, Division of Health
Original Signed By:
B. C. Warren

by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201

FORM RAD-1108

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 1 of 1 Pages
License Number 90-1
(A76)

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

AMENDMENT NO. 20

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to letter dated May 14, 1975, signed by Joseph D. Love, Department Counsel, Florida Research and Development Center, State of Florida Radioactive Materials License No. 90-1 is hereby amended as follows:

The licensee's name is changed from UNITED AIRCRAFT CORPORATION to UNITED TECHNOLOGIES CORPORATION.

Best Copy Available

E. Charlton Prather, M.D., M.P.H.
Director, Division of Health

Original Signed By:
B. C. Warren

by

Radiological and Occupational Health Section
Jacksonville, Florida 32201

JUN 6 - 1975

I

STATE OF FLORIDA
 DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
 DIVISION OF HEALTH
 Post Office Box 210
 Jacksonville, Florida 32201

FORM RAD-110

Page 1 of 5 Pages

RADIOACTIVE MATERIALS LICENSE NO. 90-1 - AMENDMENT NO. 21 (A81)

Pursuant to Chapter 290, Florida Statutes, and Chapter 10D-56, Florida Administrative Code, Control of Radiation Hazards, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

With reference to application dated December 15, 1975, signed by R. H. Anschutz, and letter dated December 12, 1975, signed by William R. Campbell,
 3. License number 90-1 is hereby amended in its entirety to read as follows:

Licensee	
1. Name	2. Address
3. Expiration date	4. Reference number
5. Radioactive material (element and mass number)	
6. Chemical and/or physical form	
7. Maximum quantity licensee may possess at any one time	

1. Name *#26* UNITED TECHNOLOGIES CORPORATION
 Pratt & Whitney Aircraft Division
 Florida Research & Development Center
 State Road 710 & Pratt & Whitney Road
 2. Address West Palm Beach, Florida 33402

3. Expiration date January 31, 1981

4. Reference number

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Thorium 232	A. Thoriated Nickel (2% Thorium oxide by volume) Thoriated Cobalt (2% Thorium oxide by volume)	A. 200 pounds Thorium oxide ✓
B. Krypton 85	B. 50 sealed sources (Spark Cap Tubes); two sources (American Atomic Association of Tucson Model SK 1090)	B. 10.7 millicuries (50 sources not to exceed 30 microcuries per tube; one source not to exceed 9 millicuries; and one source not to exceed 200 microcuries)
C. Cobalt 60	C. One sealed source (ICN, Inc. Model 675)	C. 1 millicurie
D. Lead 210	D. One sealed source, 50 microcuries (Franklin Corp. Model No. 10) One sealed source, 100 microcuries (Franklin Systems Model No. 130) One sealed source, 120 microcuries (Franklin Systems Model No. 130)	D. 270 microcuries

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

FORM RAD-1108

Page 2 of 5 Pages

License Number 90-1
(A81)

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RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

6. Radioactive material
(element and mass
number)

E. Thallium 204

F. Radium D & E

G. Strontium 90

H. Rhodium 106

I. Promethium 147

J. Promethium 147

activity
region = "S" HH3

7. Chemical and/or physical form

E. One sealed source, 50 micro-
curies (Minnesota Mining &
Manufacturing Company Model
No. 3D9 A)

F. Sealed sources
One sealed source, 20 micro-
curies (MM&M Co. Model 3D9B)
One sealed source, 20 micro-
curies (Twin City Testing Corp.
pencil probe type DD-3)
One sealed source, 20 micro-
curies (MM&M Co. Serial
No. F-279)
One sealed source, 20 micro-
curies (Twin City Testing Corp.
DD-3)

G. Sealed sources
One sealed source, 5 micro-
curies (MM&M Co. Model No. 3DLJ)
One sealed source, 5 microcuries
(MM&M Co. Serial No. F-300)

H. One sealed source (MM&M Co.
Model 3D9C)

I. Sealed sources
One sealed source, 600 micro-
curies (MM&M Co. Model No. 3D2A)
One sealed source, 600 micro-
curies (MM&M Co. Serial No.
F1282)

J. Sealed source (Unit Process
Assemblies, Inc. Model HH-3X,
Serial No. 5592)

8. Maximum quantity
licensee may possess
at any one time

E. 50 microcuries

F. 80 microcuries

G. 10 microcuries

H. 30 microcuries

I. 1200 microcuries

J. 50 microcuries

FORM NAD-1102

STATE OF FLORIDA
 DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
 DIVISION OF HEALTH
 Post Office Box 210
 Jacksonville, Florida 32201

Page 3 of 5 Pages

License Number 90-1
 (A81)

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**RADIOACTIVE MATERIALS LICENSE
 SUPPLEMENTARY SHEET**

- | | | |
|---|---|---|
| <p>6. Radioactive material (element and mass number)</p> <p>K. Promethium 147</p> <p>L. ^{alt to} Strontium 90 _{replaced} ^U HH-3 ₂₉₉₂₆</p> <p>M. Radium D</p> <p>N. ^{alt to} Thallium 204</p> <p>O. Hydrogen 3</p> <p>P. Hydrogen 3</p> <p>Q. Nickel 63</p> | <p>7. Chemical and/or physical form</p> <p>K. Two sealed sources 50 microcuries each (Unit Process Assemblies, Inc. Model HH-2B, Serial No. 5399)</p> <p>L. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial No. 9949)</p> <p>M. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial No. 8766)</p> <p>N. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial No. 7352)</p> <p>O. One sealed source (Microtek Instruments, Inc. Model No. 739310)</p> <p>P. Titanium Tritide Sealed Source (Varian Instrument Div. Model No. 02-000220-00)</p> <p>Q. Sealed source (Perkin Elmer Corporation)</p> | <p>8. Maximum quantity licensee may possess at any one time</p> <p>K. 200 microcuries</p> <p>L. 10 microcuries</p> <p>M. 10 microcuries</p> <p>N. 50 microcuries</p> <p>O. 130 microcuries</p> <p>P. 250 millicuries</p> <p>Q. 15 millicuries</p> |
|---|---|---|

9. Authorized use ^R *Add: Strontium 90, Promethium 147, Hydrogen 3, Strontium 90 29926!*

- A. Evaluation of Thoriated nickel and Thoriated Cobalt as a potential material for use in the manufacture of engine components.
- B. Development of rocket ignition systems and standard for luminescence meter.
- C. Calibration of radiological instruments.
- D. To be used with Franklin GNO Corporation Model 130 Airfoil Wall Thickness Gauge for measurement of thickness of material.
- E. through I. To be used with Twin City Testing Corporation Beta-Scope Model No. NX4 for measurement of thickness of plating.

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

Page 4 of 5 Pages

FORM RAD-1105

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License Number 90-1
(A81)

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

9. Authorized use

- J. through N. To be used with a Micro-Derm MD-3 unit in inspection work.
- O. To be used in Research Specialist Gas Chromatograph Model 600 series module.
- P. To be used in Varian Trace Gas Analyzer Model No. 00-273120-00.
- Q. To be used in Perkin Elmer Corporation, gas chromatograph, model number 3920.

CONDITIONS

- 10. ^{#28} The authorized place of use is the licensee's address stated in Item 2 above.
- 11. The licensee shall comply with the provisions of Rules, Department of Health and Rehabilitative Services, Division of Health, Control of Radiation Hazards, Chapter 10D-56, Florida Administrative Code.
- 12. ^{#24} Radioactive material described in Items 6, 7, and 8 of this license shall be used by, or under the supervision of, the appropriate individual indicated below:
 - ~~A. Shall be used by, or under the supervision of, Arthur R. Cox.~~
 - ~~B, C, O, P, and Q shall be used by, or under the supervision of, E. P. Granberry, Jr.~~
 - ~~D. through N. shall be used by, or under the supervision of, Rex M. Bell.~~
- 13. Sealed sources containing hydrogen 3 shall not be removed from the detector cells by the licensee.
- 14. Detector cells containing hydrogen 3 foils shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.
- 15. A. Each sealed source acquired from another person and containing radioactive material, other than hydrogen 3, with a half-life greater than six months and in any form other than gas shall be tested for leakage and/or contamination prior to use. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, the sealed source shall not be put into use until tested.
 - B. Surveys of sealed sources and sealed source storage containers shall be made at intervals not to exceed six months to insure the integrity of the containment. If there is indication of 0.005 microcurie or more of contamination, tests shall be made for removable contamination. Records of survey results shall be kept in units of microcuries and maintained for inspection by the Division of Health.

FORM RAD-1108

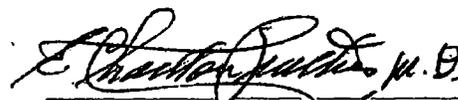
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
DIVISION OF HEALTH
Post Office Box 210
Jacksonville, Florida 32201

5 5
Page _____ of _____ Pages
90-1
License Number (A81) _____

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET
CONDITIONS**

- 15. C. Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- D. If the survey required by Subsection B of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source or source storage container from use and shall cause it to be decontaminated and repaired if necessary or to be disposed of in accordance with Division of Health regulations. If such action is required, a report shall be filed within five days of the survey with the Administrator, Radiological and Occupational Health Section, Division of Health, P. O. Box 210, Jacksonville, Florida 32201, describing the equipment involved, the test method used, the test results and the corrective action taken.
- B. Tests for leakage and/or contamination shall be performed by the licensee using ICN Tracerlab Leak Test Kit or by other persons specifically authorized by the Nuclear Regulatory Commission or an Agreement State to perform such services.

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E. Charlton Prather, M.D., M.P.H.
Director, Division of Health

Original Signed By:
Steven L. Collins

by _____
Radiological and Occupational Health Section
Jacksonville, Florida 32201

Date DEC 31 1975



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

Page 2 of 2 Pages

RAD-110 S
HRS FORM 177-11/76

HEALTH PROGRAM OFFICE
1323 Winewood Boulevard
Tallahassee, Florida 32301

License Number 20-1
(181)

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

AMENDMENT NO. 22

- S. Authorized use.
- T. To be used in Varian Trace Gas Analyzer, Model No. 2731.
- U. To be used with a Micro-Derm MD-3 unit in inspection work.

~~TO DELETE ITEMS 6., 7., 8., and 9.; subitems J., K., L., M., and N.~~

TO CHANGE CONDITION 12. TO READ:
CONDITIONS

- 12. A. Licensed material described in Items 6, 7, and 8; subitem A, shall be used by, or under, the supervision of Arthur R. Cox.
- B. Licensed material described in Items 6, 7, and 8; subitems B, C, D, P, Q, R and T shall be used by or under the supervision of E. P. Granberry, Jr.
- C. Licensed material described in Items 6, 7, and 8; subitems D, E, F, G, H, I, S, and U shall be used by, or under the supervision of Rex M. Ball.

Best Copy Available

FEB 8 1977

Date _____

E. Charlton Prather, M.D., M.P.H.
E. Charlton Prather, M.D., M.P.H.
Director, Health Program Office

Licensee - White
Central Files - Canary
Field Files - Pink
Public Information Files - Blue
County Files - Green
Office - Goldenrod

by *James Cannon*
Radiological Health Program
Tallahassee, Florida 32301



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

Page 1 of 2 Pages
License Number 90 - 1
(P.01)

RAD-110 S
HRS FORM 177-11/76

HEALTH PROGRAM OFFICE
1323 Winewood Boulevard
Tallahassee, Florida 32301

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET AMENDMENT NO. 23

UNITED TECHNOLOGIES CORPORATION
Pratt and Whitney Aircraft Division
Florida Research and Development Center
State Road 710, a Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to letters dated September 24, 1976; October 1, 1976; November 11, 1976; December 10, 1976 and December 15, 1978, State of Florida Radioactive Materials License No. 90-1 is hereby amended as follows:

NO ADD:		
6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
R. Krypton 85	R. Jet engine vanes and blades permeated with Krypton 85	R. 25 millicuries
S. Promethium 147	S. Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial No. 25054)	S. 50 microcuries
T. Hydrogen 3	T. Titanium Tritium Foil, Serial No. 156 (Varian Instrument Model No. 2731)	T. 250 millicuries
U. Strontium 90	U. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial No. 29926)	U. 10 microcuries

- V. Authorized use.
 - W. Surface duties of engine parts.
 - X. To be used with a Micro-Dorm MD-3 unit in inspection work.
- (See Page 2)

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STATE OF FLORIDA



DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

RAD-110 S
HRS FORM 177-11/78

HEALTH PROGRAM OFFICE
1323 Winewood Boulevard
Tallahassee, Florida 32301

Page 1 of 2 Pages

License Number 90-1

(A81)

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 24

UNITED TECHNOLOGIES CORPORATION
Pratt and Whitney Aircraft Division
Florida Research and Development Center
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

Best Copy
Available

With reference to letter dated October 12, 1978 and December 14, 1978, State of Florida Radioactive Materials License No. 90-1 is hereby amended as follows:

TO ADD:

- | | | |
|---|--|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| W. Promethium 147 | W. Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial No. 45468) | W. 75 microcuries |
| X. Thallium 204 | X. Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial No. 47097) | X. 90 microcuries |

9. Authorized use.

W. and X. To be used with Micro-derm MD-5 units in inspection work.

TO CHANGE CONDITION 12 TO READ:

CONDITIONS

12. A. Licensed material described in Items 6, 7, and 8, subitem A, shall be used by, or under the supervision of, Arthur R. Cox.
- B. Licensed material described in Items 6, 7, and 8, subitems B, C, O, P, Q, R, T, V, W, and X, shall be used by, or under the supervision of, E.P. Granberry, Jr.

(See page 2)

cc EE

STATE OF  FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

Page 2 of 2 Pages

RAD-110 S
HRS FORM 177-11/76

HEALTH PROGRAM OFFICE
1323 Winewood Boulevard
Tallahassee, Florida 32301

License Number 90-1
(A8T)

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

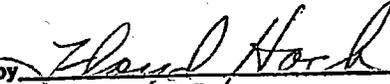
AMENDMENT NO. 24

C. Licensed material described in Items 6, 7, and 8, subitems D, E, F, G, H, I, S, and U, shall be used by, or under the supervision of Rex M. Bell.

**Best Copy
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Date January 8, 1979


E. Charlton Frather, M.D., M.P.H.
Director, Health Program Office

by 
Radiological Health Program
Tallahassee, Florida 32301

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

RAD-110 S
HRS FORM 177-11/78

HEALTH PROGRAM OFFICE
1323 Winewood Boulevard
Tallahassee, Florida 32301

Page 1 of 2 Pages

License Number 90-1
(A81)

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 25

UNITED TECHNOLOGIES, INC.
Pratt & Whitney Aircraft Division
Florida Research & Development Center
State Road 710 and Pratt and Whitney Road
West Palm Beach, Florida 33402

With reference to letter dated February 19, 1979, State of Florida Radioactive Materials No. 90-1 is hereby amended as follows:

TO ADD:

6. Radioactive material
(element and mass
number)

Y. Cadmium 109

Z. Strontium 90

AA. Thallium 204

AB. Promethium 147

7. Chemical and/or
physical form

Y. Sealed source
(Kevex Analytical
Instrument Division
Model 0102
Serial No. 3415)

Z. Sealed source
(Unit Process
Assemblies, Inc.
Model HH-3
Serial No. 49052)

AA. Sealed source
(Unit Process
Assemblies, Inc.
Model HH-3
Serial No. 47625)

AB. Sealed source
(Unit Process
Assemblies, Inc.
Model HH-3
Serial No. 25802)

8. Maximum quantity
licensee may possess
at any one time

Y. 20 millicuries

Z. 25 microcuries

AA. 100 microcuries

AB. 75 microcuries

(See page 2)

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STATE OF FLORIDA



DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

RAD-110 S
HRS FORM 177-11/78

HEALTH PROGRAM OFFICE
1323 Winewood Boulevard
Tallahassee, Florida 32301

Page 2 of 2 Pages

License Number 90-1
(A81)

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 25

6. Radioactive material
(element and mass
number)

7. Chemical and/or

8. Maximum quantity
licensee may possess
at any one time

AC. Radium D

AC. Sealed source
(Unit Process
Assemblies, Inc.
Model HH-3
Serial No. 28775)

AC. 10 microcuries

9. Authorized use.

Y. To be used with a Kevex Analytical Instrument Model 6600 for inspection work.

Z, AA, AB, AC. To be used with a Microdeim MD-3 unit in inspection work.

TO CHANGE CONDITION 12 C TO READ:

CONDITIONS

12. C. Licensed material in items 6, 7 and 8 subitems D, E, F, G, H, I, S, U, Y, Z, AA, AB and AC shall be used by or under the supervision of Rex M. Bell.

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Date March 29, 1979

E. Charlton Prather, M.D., M.P.H.
Director, Health Program Office

License - White
Central File - Canary
Field File - Pink
Public Information File - Blue
County File - Green
Office - Goldenrod
U.S.N.R.C. - White

by
Radiological Health Program
Tallahassee, Florida 32301



009506

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 26

Page 1 of 1 Pages

License Number 90-1 (A81)

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
Post Office Box 2691
St. Road 710 & Pratt and Whitney Road
West Palm Beach, Florida 33402

With reference to letter dated April 23, 1979, signed by William R. Campbell, State of Florida Radioactive Materials License No. 90-1 is hereby amended as follows:

TO CHANGE ITEMS 1 AND 2 TO READ:

- 1. Name: UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
- 2. Address: Post Office Box 2691
St. Road 710 & Pratt and Whitney Road
West Palm Beach, Florida 33402

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TO CHANGE ITEMS 6, 7, AND 8, SUBITEMS AB, AND AC, TO READ:

- | | | |
|---|---|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| BB. Promethium 147 | BB. Sealed sources (Unit Process Assemblies Inc., Model HH-3) | BB. Two sources not to exceed 75 microcuries per source |
| CC. Radium D | CC. Sealed sources (Unit Process Assemblies, Inc. Model HH 3) | CC. Two sources not to exceed 10 microcuries per source |

TO CHANGE CONDITION 12.C. TO READ:

CONDITIONS

12. C. Licensed material in Items 6, 7, 8, subitems D, E, F, G, H, I, S, U, Y, Z, AA, BB, ~~CC~~, shall be used by, or under the supervision of Rex M. Bell.

Date May 16, 1979

Uray Clark

Uray Clark
Administrator
Radiological Health Services

Original Signed by:
Floyd Hoch
by _____
Radiological Health Services

Licensee - White
Central Files - Canary
Field Files - Pink
Public Information Files - Blue
County Files - Green
Office - Goldenrod
U.S.N.R.C. - White



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 26
Page 1 of 2 Pages
License Number 90-1 (A81)

CORRECTED COPY

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
Post Office Box 2691
St. Road 710 & Pratt and Whitney Road
West Palm Beach, Florida 33402

With reference to letter dated April 23, 1979, signed by William R. Campbell, State of Florida Radioactive Materials License No. 90-1 is hereby amended as follows:

TO CHANGE ITEMS 1 AND 2 TO READ:

- 1. Name: UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
- 2. Address: Post Office Box 2691
St. Road 710 & Pratt and Whitney Road
West Palm Beach, Florida 33402

Best Copy Available

TO CHANGE ITEMS 6, 7, AND 8, SUBITEMS AB, AND AC, TO READ:

- | | | |
|---|--|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| BB. Promethium 147 | BB. Sealed source (Unit Process Assemblies Inc., Model HH-3, Serial 25802) | BB. One source not to exceed 75 microcuries |
| CC. Promethium 147 | CC. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial 45745) | CC. One source not to exceed 75 microcuries |
| DD. Radium D | DD. Sealed source (Unit Process Assemblies, Inc. Model HH 3, Serial 28775) | DD. One sources not to exceed 10 microcuries |
| EE. Radium D | EE. Sealed source (Unit Process Assemblies, Inc. Model HH 3, Serial 28764) | EE. One source not to exceed 10 microcuries |

(See page 2)



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301

RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 26

Page 2 of 2 Pages

License Number 90-1 (A81)

TO CHANGE CONDITION 12. TO READ:

CONDITIONS

- 12. A. Licensed material described in Items 6, 7, and 8, subitem A, shall be used by, or under the supervision of, Arthur R. Cox.
- B. Licensed material described in Items 6, 7, and 8, subitems B, C, O, P, Q, R, T, V, W, X, CC, and EE, shall be used by, or under the supervision of, E.P. Granberry, Jr.
- C. Licensed material in Items 6, 7, 8, subitems D, E, F, G, H, I, S, U, Y, Z, AA, BB, and DD, shall be used by, or under the supervision of Rex M. Bell.

Best Copy Available

Date May 23, 1979

Licensee - White
Central Files - Canary
Field Files - Pink
Public Information Files - Blue
County Files - Green
Office - Goldenrod
U.S.N.R.C. - White

Uray Clark

Uray Clark
Administrator
Radiological Health Services

Original Signed By:
by Floyd Hoch
Radiological Health Services



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 27

Page 1 of 1 Pages

License Number 90-1
(A81)

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
Post Office Box 2691
St. Road 710 & Pratt and Whitney Road
West Palm Beach, Florida 33402

With reference to letter dated August 2, 1979, State of Florida Radioactive Materials License No. 90-1 is hereby amended as follows:

TO CHANGE ITEMS 6, 7, AND 8, SUBITEMS Z., AA., BB., AND DD. TO READ:

- | | | |
|---|--|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| Z. Strontium 90 | Z. Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial number 49213) | Z. One source not to exceed 25 micro-curies |
| AA. Thallium 204 | AA. Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial number 47826) | AA. One source not to exceed 100 micro-curies |
| BB. Promethium 147 | BB. Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial number 45896) | BB. One source not to exceed 75 micro-curies |
| DD. Radium D | DD. Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial number 28806) | DD. One source not to exceed 10 micro-curies |

Best Copy Available

Date August 15, 1979

Ulray Clark

Ulray Clark
Administrator
Radiological Health Services

by [Signature]
Radiological Health Services

Licenses - White
Central Files - Canary
Field Files - Pink
Public Information Files - Blue
County Files - Green
Office - Goldenrod
U.S.N.R.C. - White

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 1 of 1 Pages

License Number 90-1
(A81)

AMENDMENT NO. 28

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
P. O. Box 2691
St. Road 710 & Pratt and Whitney Rd.
West Palm Beach, Florida 33402

With reference to letter dated October 20, 1980, signed by William R. Campbell, Assistant Counsel, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD:

CONDITIONS

12. D. Licensed material described in Items 6, 7, and 8, subitem V shall be used by, or under the supervision of Andrew G. Smith, Jr.

TO CHANGE CONDITION 10 TO READ:

CONDITIONS

10. A. The authorized place of use is the licensee's address stated in Item 2 above.
B. Licensed material described in Items 6, 7, 8 and 9, subitem V, may also be used at temporary job sites of the licensee throughout the State of Florida.

Best Copy Available

Ulray Clark

Ulray Clark
Administrator
Radiological Health Services

Original Signed By:
by *B. C. Warren*
Radiological Health Services

Date October 31, 1980

Licensee - White
Central Files - Canary
Field Files - Pink
Public Information Files - Blue
County Files - Green
Office - Goldenrod
U.S.N.R.C. - White

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STATE OF FLORIDA
 DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
 1317 Winwood Boulevard
 Tallahassee, Florida 32301
 RADIOLOGICAL HEALTH SERVICES
 RADIOACTIVE MATERIALS LICENSE

Page 1 of 8 Pages
 AMENDMENT NO. 29

Pursuant to Chapter 290, Florida Statutes, and Chapter 10D-56, Florida Administrative Code, Control of Radiation Hazards and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. Name UNITED TECHNOLOGIES CORPORATION PRATT & WHITNEY AIRCRAFT GROUP</p> <p>2. Address Government Products Division Post Office Box 2691 State Road 710 & Pratt & Whitney Road West Palm Beach, Florida 33402</p>	<p>With reference to application with attachments dated December 10, 1980 and letters with attachments dated April 6, 1981, State of Florida Radioactive Materials License number 90-1 (A86) is hereby amended in its entirety to read as follows:</p> <p>4. Expiration date January 31, 1986</p> <p>5. Reference number CATEGORY: 3K</p>
--	---

6. Radioactive material (element and mass number)

A. Thorium 232

*
D. Krypton 85

C. Cobalt 60

7. Chemical and/or physical form

A. Thoriated Nickel (2% Thorium oxide by volume)
 Thoriated Cobalt (2% Thorium oxide by volume)

B. 50 sealed sources (Spark Gap Tubes); one source (American Arcadia Association of Tucson, Model SR 1090)

C. One sealed source (ICN, Inc. Model 075)

8. Maximum quantity licensee may possess at any one time

A. 200 pounds Thorium oxide

10.7 millicuries (50 sources not to exceed 50 microcuries per tube; one source not to exceed 0.1 millicurie; and one source not to exceed 200 microcuries)

C. 1 millicurie

(and para 2)



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
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RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 2 of 8 Pages

License Number 99-1 (A06)
AMENDMENT NO. 29 (31)

C. Radioactive material
(element and mass number)

7. Chemical and/or physical form

8. Maximum quantity
licensee may possess
at any one time

D. Lead 210

D. One sealed source, 50
microcuries (Franklin
Corp. Model No. 10)
One sealed source, 100
microcuries (Franklin
Synetic Model No. 130)
One sealed source, 120
microcuries (Franklin
Synetic Model No. 130)

D. 270 microcuries

#32
E. Cobalt 60

E. One sealed source, 50
microcuries (Minnesota
Mining & Manufacturing
Company Model No. 3D9 A)

E. 50 microcuries

#32
F. Sodium D & E

F. Sealed sources
One sealed source, 20
microcuries (M&M Co.
Model 3D9B)
One sealed source, 20
microcuries (Avin City
Packaging Corp. serial #36
probe type DD-3) One
One sealed source, 20
microcuries (M&M Co.
Serial No. F-279)
One sealed source, 20
microcuries (Avin City
Packaging Corp. DD-3)

F. 80 microcuries

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#32
G. Strontium 90

G. Sealed sources
One sealed source, 5
microcuries (M&M Co.
Model No. 3D1J)
One sealed source, 5
microcuries (M&M Co.
Serial No. F-303)

G. 10 microcuries



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
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RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 8 of 8 Pages

License Number 90-1 (A80)
AMERICAN CO. 29 (3E)

Radioactive material
(element and mass number)

7. Chemical and/or physical
form

8. Maximum quantity
licensee may possess
at any one time

#32
H. Iridium 192

H. One sealed source
(MIM Co. Model 3D90)

H. 30 microcuries

#32
I. Protactinium 147

I. Sealed sources
One sealed source, 600
microcuries (MIM Co.
Model No. 3D2A)
One sealed source, 600
microcuries (MIM Co.
Serial No. P12D2)

I. 1200 microcuries

J. Hydrogen 3

J. One sealed source
(Microtek Instruments,
Inc. Model No. 73D310)

J. 130 microcuries

K. Hydrogen 3

K. Titanium Trisulfide Sealed
Source (Varian Instrument
Div. Model No. 62-006220-00)

K. 250 millicuries

L. Nickel 63

L. Sealed source (Perkin Elmer
Corporation)

L. 16 millicuries

M. Krypton 85

M. Job engine valves and
blades polished with
Krypton 85

M. 25 millicuries

N. Protactinium 147

N. Sealed source (Unit
Process Applications,
Model M-3, Serial
No. 25026)

N. 30 microcuries

O. Hydrogen 3

O. Titanium Trisulfide Foil,
Serial No. 106 (Varian
Instrument Model No.
2731)

O. 250 millicuries

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DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

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RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 4 of 8 Pages

License Number DC-1 (A96)
AMENDMENT NO. 29 (SK)

6. Radioactive material
(element and mass number)

7. Chemical and/or physical
form

8. Maximum quantity
licensure may possess
at any one time

#32
P. Uranium 235

P. Sealed source (Unit
Process Assemblies,
Inc., Model HA-9, Serial
No. 29026)

P. 10 microcuries

Q. Krypton 85

Q. Sealed source, unencapsulated
gas (General Instrument
Division - Tyco Model/
Drawing No. 0900750)

Q. 500 millicuries

R. Strontium 90

R. Sealed source (Unit
Process Assemblies,
Inc., Model HA-9,
Serial No. 45468)

R. 75 microcuries

S. Thallium 208

S. Sealed source (Unit
Process Assemblies,
Inc., Model HA-9,
Serial No. 67897)

S. 60 microcuries

T. Cobalt 60

#30
T. Sealed source (Kover
Analytical Instrument
Division Model OIG2,
Serial No. 3413)

#20
T. 20 millicuries

#31
U. Cesium 137

U. Sealed source (Unit
Process Assemblies,
Inc., Model HA-9,
Serial No. 47223)

U. 25 microcuries

#32
V. Thallium 204

V. Sealed source (Unit
Process Assemblies,
Inc., Model HA-9,
Serial No. 67826)

V. One source not to
exceed 100 microcuries

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DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

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RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 5 of 11 Pages

License Number 90-1 (A06)
ASSIGNMENT NO. 29 (JR)

6. Radioactive material
(element and mass number)

#37
E. Promethium 147

X. Promethium 147

#37
Y. Radium D

Z. Radium D

7. Chemical and/or physical form

W. Sealed source (Unit Process Assemblies, Inc., Model EB-3, Serial No. 45690)

X. Sealed source (Unit Process Assemblies, Inc., Model EB-3, Serial No. 45749)

Y. Sealed source (Unit Process Assemblies, Inc., Model EB-3, Serial No. 20000)

Z. Sealed source (Unit Process Assemblies, Inc., Model EB-3, Serial No. 28764)

8. Initial quantity
licensor may process
at any one time

W. One source not to exceed 79 microcuries

X. One source not to exceed 75 microcuries

Y. One source not to exceed 10 microcuries

Z. One source not to exceed 10 microcuries

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9. Authorized Use:

A. Evaluation of shortened radial and elongated cobalt as a potential material for use in manufacture of castable composites.

B. Development of proper quality control and standard for laminar flow cabinet.

C. Calibration of radiological instruments.

D. To be used with densitometer in GPO Corporation Model 130 microfilm roll thickness gauge for measurement of thickness of material.

E.F.G.H.I.
#37

L. To be used with Kern City Reading Corporation densitometer Model No. 117 for measurement of thickness of plates.



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

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Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 3 of 3 Pages

License Number 90-1 (A06)
AMENDMENT NO. 29 (SE)

J. Authorized Use.

- *37* H. P., R., S., U., V., W., X., Y., and Z. To be used with a Micro-Derm MD-3 unit in inspection work.
- *32* I. To be used in research specialist gas chromatograph Model 600 series models.
- *32* K. To be used in Varian trace gas analyzer, Model No. 60-273120-00.
- *32* L. To be used in Packin Elmer Corporation gas chromatograph, Model No. 3920.
- M. Surface duties of engine parts.
- *32* O. To be used in Varian trace gas analyzer, Model No. 2731.
- *32* Q. To be used in oil quantity indicator on military jet engine.
- *32* R. To be used with Hewlett Analytical Instrument, Model 6000, for inspection work.

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**34* AA. **35* BB. **35* CC. **36* DD. **36*

CONDITIONS

- 10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
- *32* 11. The licensee shall comply with the provisions of "Title, Department of Health and Rehabilitative Services, Control of Radiation Hazards", Chapter 10B-56, Florida Administrative Code.
- *32* 12. Licensed material shall be used by, or under the supervision of, Des Bell, Arthur Cox, or Andrew G. Smith.
- 13. Detector cells containing licensed material shall not be opened or the fuel sources removed from the detector cells by the licensee.
- 14. Detector cells containing Hydrogen 3 fuel shall only be used in conjunction with a properly operating temperature control mechanism which provides fuel temperatures not exceeding 225 degrees centigrade.

(See Page 7)



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

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RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 7 of 0 Pages

License Number 90-1 (A06)
AMENDMENT NO. 29 (3X)

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15. Detector coils containing Nickel 63 foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 390 degrees centigrade.
16. A. Each sealed source required from another person and containing radioactive material other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas, shall be tested for leakage and/or contamination prior to use. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, the sealed source shall not be put into use until tested.
- B. Surveys of sealed sources and sealed source storage containers shall be made at intervals not to exceed six months to insure the integrity of the containment. The test sample shall be taken from the sealed source or from the surface of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of survey results shall be kept in units of microcuries and maintained for inspection by the Department of Health and Rehabilitative Services.
- C. If the survey required by Section B. of this condition reveals the presence of 0.005 microcuries or more of removable contamination, the licensee shall immediately withdraw the sealed source or source storage container from use and shall cause it to be decontaminated and repaired if necessary or to be disposed of in accordance with the Department of Health and Rehabilitative Services regulations. If such action is required, a report shall be filed within five days of the survey with the Administrator, Radiological Health Services, Department of Health and Rehabilitative Services, 1300 Winewood Boulevard, Tallahassee, Florida 32301, describing the equipment involved, the test method used, the test results and the corrective action taken.
- D. Tests for leakage and/or contamination shall be performed by the manufacturer, the licensee having an approved leak test kit, or by persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such tests.
17. A. Except as occasionally provided otherwise by this license, the licensee shall possess and use licensed material described in items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in the licensee's application with amendments dated December 10, 1980 and letters with amendments dated April 6, 1981, all signed by W. S. Parker.



STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

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RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 8 of 8 Pages

License Number 00-1 (A03)
AMENDMENT NO. 29 (27)

D. "Rules, Control of Radiation Hazards" regulations, Chapter 10D-56, Florida Administrative Code shall supersede the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

18. #31
19. #36

Best Copy Available

Date April 18, 1961

License - White
Central Files - Canary
Field Files - Pink
Public Information Files - Blue
County Files - Green
Office - Goldenrod
U.S.N.R.C. - White

Uray Clark

Uray Clark
Administrator
Radiological Health Services

Original Signed by:
by Floyd Hoch
Radiological Health Services

010836

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
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RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 1 of 1 Pages

License Number 90-1 (A36)
AMFNDMENT NO. 30 (3E)

UNITED TECHNOLOGIES CORPORATION
PRATT & WHITELY AIRCRAFT GROUP
Government Products Division
Post Office Box 2691
State Road 710 & Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to letters with attachments dated December 7, 1981 and February 1, 1982, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows

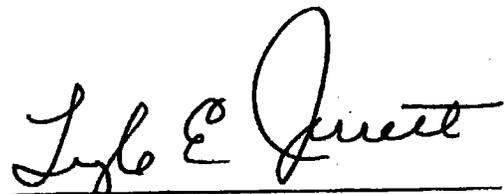
TO CHANGE ITEMS 7 AND 8, SUBITEM T TO READ:

- | | |
|---|---|
| 7. Chemical and/or physical form | 3. Maximum quantity license may possess at any one time |
| T. Sealed source (Kevex Analytical Instrument Model 0102) | T. 40 millicuries. No single source to exceed 20 millicuries. |

Best Copy Available

Date February 15, 1982

Licensee - White
Central Files - Canary
Field Files - Pink
Public Information Files - Blue
County Files - Green
Office - Goldenrod
U.S.N.R.C. - White



Lyle E. Jerrett, Ph.D.
Director
Radiological Health Services

Original Signed by:
by Floyd Hoch
Radiological Health Services

012065

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301

RADIATION CONTROL
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 1 of 1 Pages

License Number 90-1 (A86)
AMENDMENT NO. 33 (3K)

UNITED TECHNOLOGIES CORPORATION
PRATT & WHITNEY AIRCRAFT GROUP
Government Products Division
Post Office Box 2691
State Road 710 and Pratt & Whitney Road
West Palm Beach, Florida 33402

With reference to correspondence dated October 5, 1983, State of Florida Radioactive Materials License number 90-1 is hereby amended as follows:

TO CHANGE CONDITION 12 TO READ:

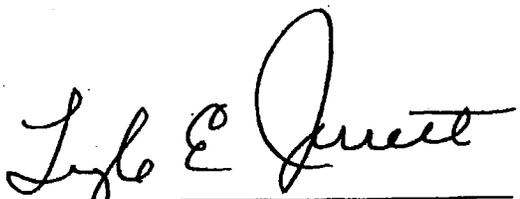
CONDITIONS

- 12. A. Licensed material in Items 6, 7, and 8, subitems B, C, D, J, K, L, M, N, O, S, T, X, and Z, shall be used by, or under the supervision of Edwin P. Granberry, Jr.
- B. Licensed material in Items 6, 7, and 8, subitems R and T, shall be used by, or under the supervision of, Rex M. Bell.
- C. Licensed material in Items 6, 7, and 8, subitem A, shall be used by, or under the supervision of, Arthur R. Cox.
- D. Licensed material in Items 6, 7, and 8, subitem Q, shall be used by, or under the supervision of, Andrew G. Smith.

Best Copy Available

Date October 11, 1983

Licensees - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink



Lyle E. Jerrett, Ph.D.
Director
Radiation Control

by William Eden
Radiation Control

012276

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301

RADIATION CONTROL
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 1 of 2 Pages

License Number 90-1
AMENDMENT NO. 34
(3K)(A86)

**Best Copy
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UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
State Road 710 And Pratt & Whitney Road
Post Office Box 2691
West Palm Beach, Florida 33402

With reference to correspondence dated January 20, 1984, State of Florida Radioactive Materials License number 90-1 is hereby amended as follows:

TO ADD:

- | | | |
|--|---|---|
| 6. Radioactive material
(element and mass number) | 7. Chemical and/or physical
form | 8. Maximum quantity licensee
may possess at any one time |
| AA. Cesium 137 | AA. Sealed source (Isotopes
Products Laboratories,
model number 229R-1) | AA. 10 microcuries |

9. Authorized Use.

- AA. To be used for pocket dosimeter calibrations in Dosimeter Corporation of America model number 3060 dosimeter calibrator.

TO CHANGE CONDITION 12 TO READ:

CONDITIONS

12. A. Licensed material in Items 6, 7, and 8, subitems B, C, D, J, K, L, M, N, O, S, T, X, Z, and AA, shall be used by, or under the supervision of Edwin P. Granberry, Jr.

(See Page 2)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIATION CONTROL
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 2 of 2 Pages

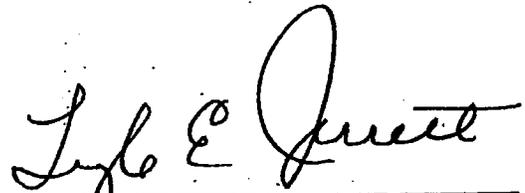
License Number 90-1
AMENDMENT NO. 34
(3K)(A86)

- 12. B. Licensed material in Items 6, 7, and 8, subitems R and T, shall be used by, or under the supervision of, Rex M. Bell.
- C. Licensed material in Items 6, 7, and 8, subitems A, shall be used by, or under the supervision of, Arthur R. Cox.
- D. Licensed material in Items 6, 7, and 8, subitem Q, shall be used by, or under the supervision of, Andrew G. Smith.

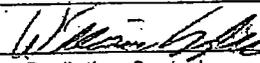
Best Copy Available

Date February 2, 1984

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink



Lyle E. Jerrett, Ph.D.
Director
Radiation Control

by 
Radiation Control

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIATION CONTROL
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 1 of 1 Pages

License Number 90-1
AMENDMENT NO. 35
(3K) (A86)

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
State Road 710 and Pratt & Whitney Road
P. O. Box 2691
West Palm Beach, FL 33402

Best Copy Available

With reference to correspondence dated September 19, 1984, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD:

- | | | |
|--|--|---|
| 6. Radioactive material
(element and mass number) | 7. Chemical and/or physical
form | 8. Maximum quantity licensee
may possess at any one time |
| BB. Strontium 90 | BB. Sealed source (UPA
Technology, Inc.,
model HH-3, Serial
number 49714) | BB. 25 microcuries |

9. Authorized Use.

BB. To be used with a micro-derm MD-3 unit in inspection work.

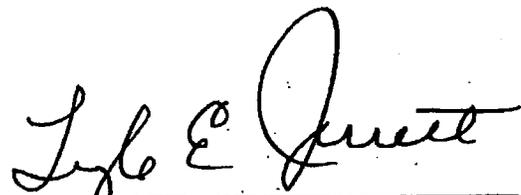
TO CHANGE CONDITION 12.A. TO READ:

CONDITIONS

12. A. Licensed materials in Items 6, 7 and 8, Subitems B, C, D, J, K, L, M, N, O, S, T, X, Z, AA, and BB, shall be used by, or under the supervision of Edwin P. Granberry, Jr.

Date October 31, 1984

Licensee - White
Central Files - Canary
U.S.N.F.C. - Pink
Office - Canary
Field Files - Pink



Lyle E. Jerrett, Ph.D.
Director
Radiation Control

by 
Radiation Control Ed Pombier

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIATION CONTROL
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 1 of 2 Pages

License Number 90-1
AMENDMENT NO. 53
(3K)(A86)

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
State Road 710 and Pratt & Whitney Road
P. O. Box 2691
West Palm Beach, FL 33402

**Best Copy
Available**

With reference to correspondence dated September 5, 1985, and November 12, 1985, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD:

- | | | |
|---|--|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| AA. Nickel 63 | CC. Sealed source (U.S. Radium LAB 508-3, Amersham NBC, or New England Nuclear NER-002 or NER-004) | CC. 4 sources not to exceed 8 microcuries each |
| BB. Hydrogen 3 | DD. Titanium Tritide Foil (U.S. Radium Corp. LAB-508-3 Foil) | DD. 2 sources not to exceed 1000 millicuries each |

EE. ~~Unlabeled Use.~~

FF. ~~Used in Varian Model Vista 64, 6000 Gas Chromatograph for analysing PCB's.~~

GG. ~~Used in Valco Instruments Co., Inc. Model 1000 Trace Gas analyzer.~~

(See Page 2)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIATION CONTROL
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 2 of 2 Pages

License Number 90-1
AS RECORDED BY 50
(3K) (A86)

TO CHANGE ITEMS 6, 7 AND 8, SUBITEM B TO READ:

- | | | |
|--|---|--|
| 5. Radioactive material
(element and mass number) | 7. Chemical and/or physical
form | 8. Maximum quantity licensee
may possess at any one time |
| 5. Krypton 85 | B.- 50 sealed sources (Spark
Cap Tubes) One source
(American Atomic
Association of Tucson
Model SK1090) | B. 50 sources not to exceed
30 microcuries per tube;
one source not to exceed
200 microcuries |

TO DELETE ITEMS 6, 7, 8 AND 9, SUBITEMS C, D, J, K, L AND O:

TO ADD CONDITION 19 TO READ:

CONDITIONS

19. At annual intervals, an inventory of all sealed and plated sources of radioactive materials will be conducted which determines the general physical condition of each source and the location of each source. Records shall be maintained for inspection by the Department of Health and Rehabilitative Services and shall include the date of the inventory and the name of the person performing the survey.

Best Copy
Available

Date February 6, 1986

Lyle E. Jerrett, Ph.D.
Director
Radiation Control

by [Signature]
Radiation Control

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

50909-503

**STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL**

RADIOACTIVE MATERIALS LICENSE

Page 1 of 6 Pages
AMENDMENT NO. 37

Pursuant to Chapter 404, Florida Statutes, and Chapter 10D-91, Florida Administrative Code, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to receive, acquire, possess and transfer the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

Licensee		With reference to renewal application dated 12/17/85, State of Florida Radioactive Materials 3. License Number: 90-1 is hereby renewed in its entirety to read as follows:
1. Name:	UNITED TECHNOLOGIES CORPORATION Pratt & Whitney Aircraft Group	
2. Address:	Government Products Division Post Office Box 2691 State Road 710 S. Pratt & Whitney Road West Palm Beach, FL 33402	4. Expiration date: January 31, 1991
		5. Category: 3K
6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Thorium 232	A. Thoriated nickel (2% thorium oxide by volume) thoriated cobalt (2% thorium oxide by volume)	A. 200 pounds thorium oxide.
B. Krypton 85	B. Jet engine vanes & blades permeated with krypton 85	B. 25 millicuries
C. Promethium 147	C. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 55036)	C. 1 source not to exceed 50 microcuries.
D. Promethium 147	D. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 45468)	D. 1 source not to exceed 75 microcuries.
E. Thallium 204	E. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 47097)	E. 1 source not to exceed 90 microcuries.

(See Page 2)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 2 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 37
(3K) (A91)

- | | | |
|---|--|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| F. Promethium 147 | F. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 45745) | F. 1 source not to exceed 75 microcuries. |
| G. Lead 210 | G. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 28764) | G. 1 source not to exceed 90 microcuries. |
| H. Strontium 90 | H. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 49714) | H. 1 source not to exceed 24 microcuries. |
| I. Cadmium 109 | I. Sealed source (Kevex Analytical Instrument Division, Model 0102) | I. 2 sources; not to exceed 20 microcuries each. |
| J. Cesium 137 | J. Sealed source (Isotope Products Laboratories Model 229 B-1) | J. 1 source not to exceed 10 microcuries. |
| K. Nickel 63 | K. Sealed sources (U. S. Radium LAB 508-3, Amersham NCB or New England Nuclear NER-002 or NER-006) | K. 4 sources; not to exceed 8 microcuries each. |
| L. Hydrogen 3 | L. Titanium Tritide Foil (U. S. Radium Corp. LAB 508-3 Foil) | L. 2 sources; not to exceed 1,000 microcuries each. |
| M. #38 | M. #38 | M. #38 |
| N. #39 | N. #39 | N. #39 |
| O. #39 | O. #39 | O. #39 |

9. Authorized Use

- A. Evaluation of thoriated nickel and thoriated cobalt as a potential material for use in the manufacture of engine components.
- B. Surface studies of engine parts.

(See Page 3)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 3 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 37
(3K) (A91)

- C. through H. To be used with Micro-Derm MD-3 units in inspection of coating thickness.
- I. To be used with Kevex Analytical Instrument, Model 0102, for inspection work.
- J. To be used for pocket dosimeter calibrations in Dosimeter Corporation of America Model 3060 dosimeter calibrator.
- K. To be used with Varian Model Vista 64, 6000 gas chromatograph detector for analyzing PCB's.
- L. To be used in Valco Trace Gas Analyzer, Model 1000.

M.S.N. #38 O.#39

CONDITIONS

- 10. The authorized place of use is the licensee's address stated in Item 2, above.
- 11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to Section 404.161, Florida Statutes. Also, violations may warrant an administrative fine of up to \$1,000.00 per violation per day, pursuant to Section 404.162, Florida Statutes.
- 12. #45
 - A. Licensed material in Items 6, 7, 8, and 9, Subitems 3 through H, J and L shall be used by or under the supervision of Edwin P. Granberry, Sr.
 - B. Licensed material in Items 6, 7, 8, and 9, Subitem A shall be used by or under the supervision of Arthur R. Cox.
 - C. Licensed material in Items 6, 7, 8, and 9, Subitems D, I and H shall be used by Alson D. Owen.
 - D. Licensed material in Items 6, 7, 8, and 9, Subitem K shall be used by James M. Spurlock, III.
- 13. The licensee shall comply with the provisions of Chapter 10D-91, Florida Administrative Code, Part X, "Notices, Instructions and Reports to Workers; Inspections" and Part IV, "Standards for Protection Against Radiation".
- 14. Sealed sources containing licensed material shall not be opened.
- 15. Detector cells containing licensed material shall not be opened or the foil source removed from the detector cell by the licensee.

(See Page 4)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 4 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 37
(3K) (A91)

^{#38} 16. Detector cells containing nickel 63 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 400° degrees celsius.

17. Detector cells containing hydrogen 3 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 200° degrees celsius.

^{#68} 18. A. (1) Each sealed source containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months, except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months. In the absence of a certificate from a transferor, indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.

(2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

(3) Detector cells containing nickel 63 shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a detector received from another person shall not be put into use until tested.

B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department of Health and Rehabilitative Services.

(See Page 5)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 5 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 37
(3K) (A91)

18. ^{#35} C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department of Health and Rehabilitative Services regulations. A report shall be filed within five (5) days of the test with the Office of Radiation Control, Radioactive Materials Program, Department of Health and Rehabilitative Services, 1317 Winewood Boulevard, Tallahassee, Florida 32399-0700, describing the equipment involved, the test method used, the test results and the corrective action taken.
- D. The test sample (smear) shall be taken by the licensee using an approved leak test kit. Analysis of the test sample for leakage and/or contamination shall be performed by persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
19. At annual intervals an inventory and inspection of all devices containing radioactive material shall be conducted which determine, where applicable, at least the general physical condition of the device, proper shutter operation and adequate posting of radiation caution signs. Records shall be maintained for inspection by the Department of Health and Rehabilitative Services and shall include the date of inventory; the location and identification of the devices; the quantity and kinds of radioactive material and the findings of the physical inspections.
20. The licensee shall notify the Office of Radiation Control at least forty-eight (48) hours in advance of shipping its low-level radioactive waste to a commercial treatment, storage or burial site. Notification shall consist of either calling (305) 297-2095 or writing the Office of Radiation Control, Post Office Box 15490, Orlando, Florida 32858.
21. The licensee shall not transfer possession and/or control of radioactive material, or products containing radioactive material as a contaminant except:
- A. By transfer to a specifically licensed recipient; or
- B. As provided otherwise by specific provision of this license pursuant to the requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, Florida Administrative Code.

(See Page 6)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 6 of 9 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

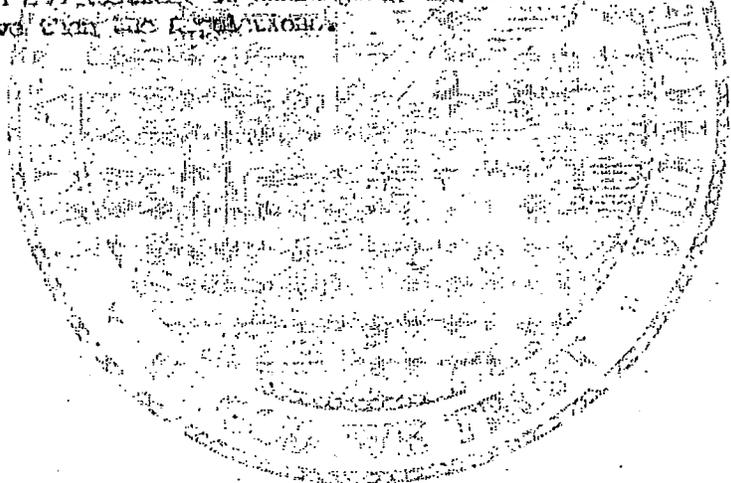
License Number 96-1
ARTICLE NO. 37
(3R) (201)

29. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, 8 and 9 of this license in accordance with statements, representations, and procedures contained in the licensee's renewal application dated December 17, 1966, signed by A. P. Cranberry, Jr., Manager, Industrial Systems & Safety Engineering, and correspondence dated:

October 16, 1966; and
January 5, 1967, both signed by Ricky L. Hollis, Sr., Senior Safety Engineer and Assistant Radiation Safety Officer (RSO); and
April 2, 1967, signed by [Name Redacted]

4. The licensee shall comply with all applicable requirements of the "Florida Control of Radiation Installation" Act, Chapter 389, Florida Administrative Code, and all other regulations which the licensee's statements in applications or other documents, and the statements are more restrictive than the regulations.

23. # 39



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For the Office of Radiation Control

Date May 13, 1967
Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

Raul L. Warden, Jr.
Public Health Physician

71008-618

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 1 of 3 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 38
(3K) (A91)

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
Post Office Box 2691
State Road 710 & Pratt & Whitney Road
West Palm Beach, FL 33402

With reference to correspondence dated October 6, and November 25, 1987, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD ITEMS 6, 7, 8 and 9, Subitems M and N TO READ:

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
M. Nickel 63	M. Foil (New England Nuclear Model NEA-004)	1 source not to exceed 10 millicuries.
N. Cesium 137	N. Sealed sources (Ohmart Corporation Models A-2100 or A-2102)	1 source not to exceed 80 microcuries.
9. Authorized Use		
M. To be used in a Hewlett Packard Instrument Company Model 902 gas chromatograph for analyzing hydraulic fluid.		
N. To be used in an Ohmart Corporation Model SR-A source holder for use in level out series 1000 powder levels.		

(See Page 2)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 2 of 3 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 38
(3K) (A91)

TO CHANGE CONDITIONS 12, 16 and 18 TO READ:

CONDITIONS

- 12. A. Licensed material in Items 6, 7, 8 and 9, Subitems B through H and J shall be used by or under the supervision of Edwin P. Granberry, Sr.
 - B. Licensed material in Items 6, 7, 8 and 9, Subitem A shall be used by or under the supervision of Arthur R. Cox.
 - C. Licensed material in Items 6, 7, 8 and 9, Subitems D, I and H shall be used by Alson D. Owen.
 - D. Licensed material in Items 6, 7, 8 and 9, Subitem K shall be used by James M. Spurlock, III.
 - E. Licensed material in Items 6, 7, 8 and 9, Subitems L and M shall be used by or under the supervision of Marc E. Rippen.
 - F. Licensed material in Items 6, 7, 8 and 9, Subitem N shall be used by or under the supervision of Robert E. Herricks.
16. Detector cells containing nickel 63 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 350° celsius for the gas chromatograph named in items 6, 7, 8 and 9, Subitem M and 400° celsius for the gas chromatograph named in Items 6, 7, 8 and 9, Subitem K.
- 18. A. (1) Each sealed source containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months, except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months. In the absence of a certificate from a transferor, indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
 - (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

(See Page 3)

Best Copy Available

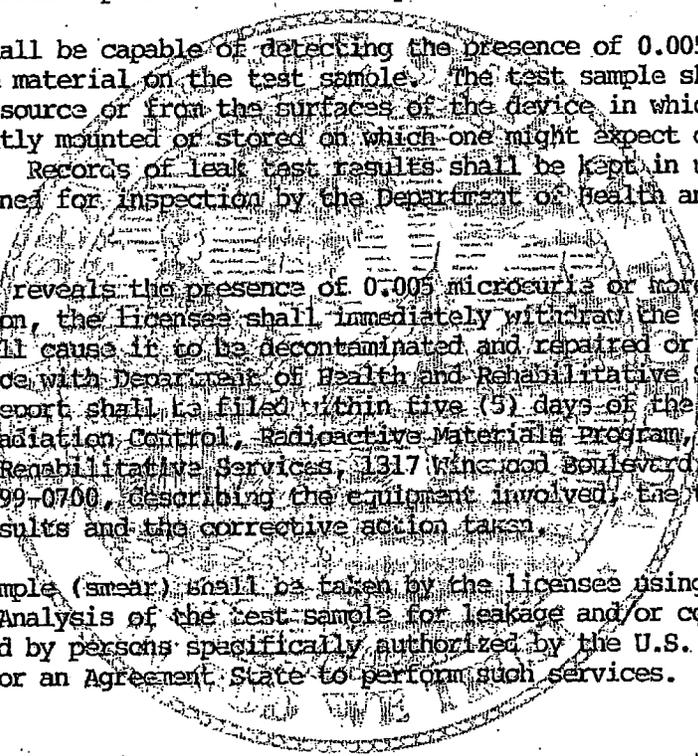
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 3 of 3 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 38
(3K) (A91)

- 18. A. (3) Detector cells containing nickel 63 shall be tested for leakage and/or contamination at intervals not to exceed six months, except the source listed in Items 6, 7, 8 and 9, Subitem M, which shall be tested for leakage and/or contamination at intervals not to exceed thirty six months. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a detector received from another person shall not be put into use until tested.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department of Health and Rehabilitative Services.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department of Health and Rehabilitative Services regulations. A report shall be filed within five (5) days of the test with the Office of Radiation Control, Radioactive Materials Program, Department of Health and Rehabilitative Services, 1317 Winwood Boulevard, Tallahassee, Florida 32399-0700, describing the equipment involved, the test method used, the test results and the corrective action taken.
- D. The test sample (smear) shall be taken by the licensee using an approved leak test kit. Analysis of the test sample for leakage and/or contamination shall be performed by persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.



Best Copy Available

For the Office of Radiation Control

Michael J. Stephy

for Paul E. Vause, Jr.
Public Health Physicist

Date February 5, 1988

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 1 of 2 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 39
(3K) (A91)

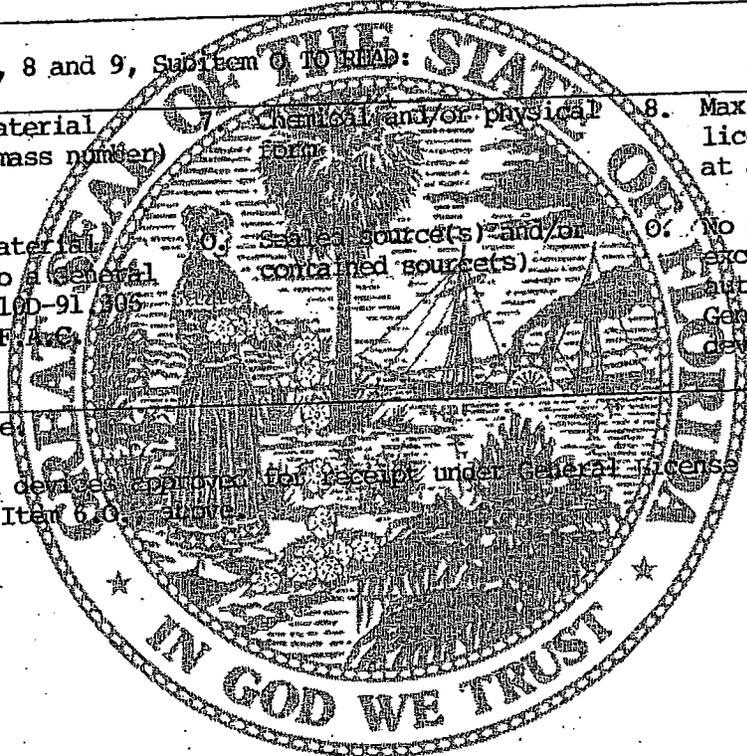
UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
P. O. Box 2691
State Road 710 & Pratt Whitney Road
West Palm Beach, FL 33402

With reference to correspondence dated February 1, 1988, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD ITEMS 6, 7, 8 and 9, Substitute TO READ:

- 6. Radioactive material (element and mass number) ~~Chemical and/or physical form~~
- 7. Radioactive material distributed to a General Licensee per 10D-91.306 (1) and (4), ~~above~~ ~~General source(s) and/or contained sources)~~
- 8. Maximum quantity licensee may possess at any one time
- 9. Authorized Use
- 10. To be used in devices approved for receipt under general license provisions as described in Item 6 ~~above~~

(See Page 2)



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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 2 of 2 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

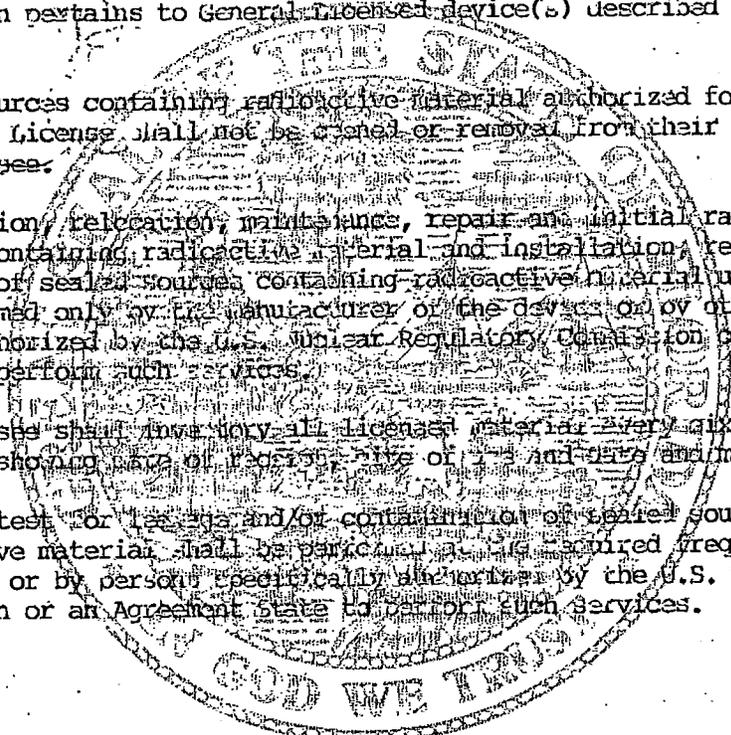
License Number 50-
AMENDMENT NO. 39
(3K) (A91)

TO ADD CONDITION 23 TO READ:

CONDITIONS

23. This condition pertains to General License device(s) described in Items 6, 7, and 8, subitem 0:

- A. Sealed sources containing radioactive material authorized for distribution under a General license shall not be changed or removed from their source holders by the licensee.
- B. Installation, relocation, maintenance, repair and initial radiation survey of devices containing radioactive material and installation, replacements and disposal of sealed sources containing radioactive material used in devices shall be performed only by the manufacturer of the device or by other persons specifically authorized by the U.S. Nuclear Regulatory Commission or by an Agreement State to perform such services.
- C. The licensee shall inventory all licensed material every six months and maintain a record showing date of receipt, date of inventory and method of disposal.
- D. Required test for leakage and/or contamination of sealed sources containing radioactive material shall be performed at the required frequency, by the manufacturer, or by persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.



Best Copy Available

For the Office of Radiation Control

Randy R. Aldridge
Randy R. Aldridge
Public Health Physicist

Date March 14, 1988

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 1 of 6 Pages
AMENDMENT NO. 40

RADIOACTIVE MATERIALS LICENSE

Pursuant to Chapter 404, Florida Statutes, and Chapter 10D-91, Florida Administrative Code, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to receive, acquire, possess and transfer the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

Licensee		With reference to correspondence dated 5/5/88, State of Florida Radioactive Materials
1. Name:	UNITED TECHNOLOGIES CORPORATION Pratt & Whitney Aircraft Group Government Products Division	3. License Number: 90-1 is hereby amended in its entirety to read as follows:
2. Address:	Post Office Box 2691 State Road 710 & Pratt & Whitney Rd. West Palm Beach, FL 33402	Expiration date: January 31, 1991
		Category: 3K
6. Radioactive material (element and mass number)	Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Thorium 232	A. Thoriated nickel or cobalt (2% thorium oxide by volume)	A. 200 pounds thorium oxide.
B. Krypton 85	B. Krypton 85 permeated jet engine parts	B. 25 millicuries
C. Cadmium 109	C. Sealed source (Kevex Analytical Instrument Division, Model AN-109)	C. 2 sources; not to exceed 20 millicuries each.
D. Nickel 63	D. Sealed sources (New England Nuclear Model NER-004)	D. 1 source not to exceed 10 millicuries.
E. Cesium 137	E. Sealed sources (Ohmart Corporation Models A-2100 or A-2102)	E. 1 source not to exceed 80 millicuries.
F. Radioactive material distributed to a General Licensee per 10D-91.306(1) and (4), F.A.C.	F. Sealed source(s) and/or contained source(s)	F. No single source to exceed that quantity authorized for the General License device.
#41 G. H. (See Page 2)	#41 G. H. #42 ISJK	#41 G. H. #42 ISJK

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 2 of 6 Pages

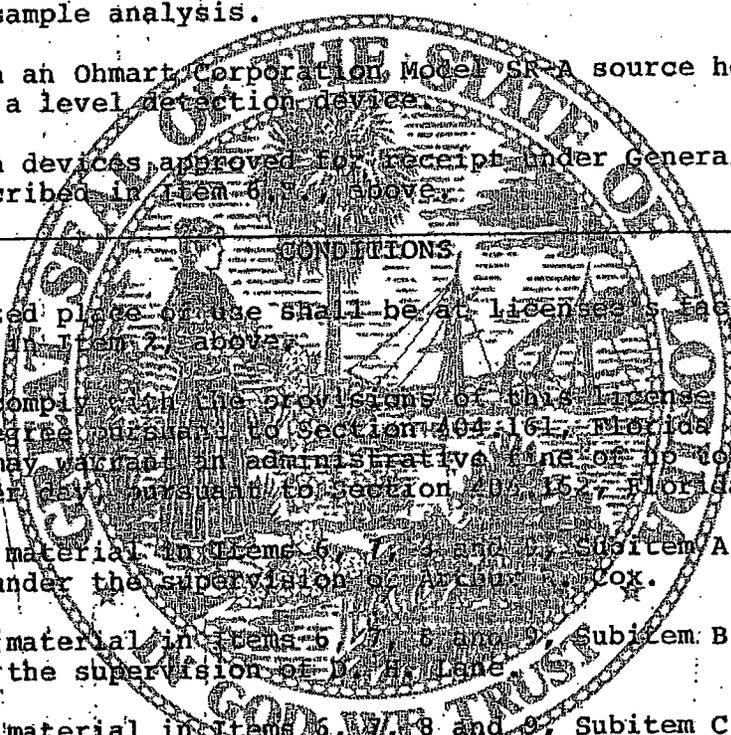
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 40
(3K) (A91)

9. Authorized Use.

- A. Evaluation of thoriated cobalt or nickel as material for use in engine components.
- B. Surface studies of engine parts.
- C. To be used in Kevex Analytical Instrument Model 6600 for sample analysis.
- D. To be used in a Hewlett Packard Instrument Company Model 902 gas chromatograph for sample analysis.
- E. To be used in an Ohmart Corporation Model 58-A source holder as a component of a level detection device.
- F. To be used in devices approved to receipt under General License provisions as described in Item 6 above.

G. & H.



- 10. The authorized place of use shall be at licensee's facility located at the address in Item 2 above.
- 11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to Section 44.16, Florida Statutes. Also, violations may warrant an administrative fine of up to \$1,000.00 per violation per day pursuant to Section 40.15, Florida Statutes.
- 12. A. Licensed material in Items 6, 7, 8 and 9, Subitem A shall be used by or under the supervision of Arthur Cox.
- B. Licensed material in Items 6, 7, 8 and 9, Subitem B shall be used by or under the supervision of [redacted].
- C. Licensed material in Items 6, 7, 8 and 9, Subitem C shall be used by or under the supervision of Alson D. Owen.
- D. Licensed material in Items 6, 7, 8 and 9, Subitem D shall be used by or under the supervision of Marc E. Rippen.
- E. Licensed material in Items 6, 7, 8 and 9, Subitem E shall be used by or under the supervision of Robert E. Hendricks.

Licensed material in Items 6, 7, 8 and 9, Subitem F shall be used by individuals approved by the Radiation Safety Officer. Copies of approval will be kept on file for inspection.

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 3 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 40
(3K) (A91)

13. The licensee shall comply with the provisions of Chapter 10D-91, Florida Administrative Code, Part X, "Notices, Instructions and Reports to Workers; Inspections" and Part IV, "Standards for Protection Against Radiation".
14. Sealed sources containing licensed material shall not be opened nor removed from their respective source holders by the licensee.
15. Detector cells containing licensed material shall not be opened nor the foil source removed from the detector cell by the licensee.
16. Detector cells containing ⁶³Nickel shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 350 degrees Celsius.
17. A. (1) Each sealed source containing licensed material, other than Hydrogen ³, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six (6) months, except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months. Detector cells described in Items 6, 7, 8 and 9, Subitem D may be tested for leakage and/or contamination at intervals not to exceed thirty six (36) months. In the absence of a certificate from a transferor, indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department of Health and Rehabilitative Services.

(See Page 4)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 4 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 40
(3K) (A91)

17. C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department of Health and Rehabilitative Services regulations. A report shall be filed within five (5) days of the test with the Office of Radiation Control, Radioactive Materials Program, Department of Health and Rehabilitative Services, 1317 Winewood Boulevard, Tallahassee, Florida 32399-0700 describing the equipment involved, the test method used, the test results and the corrective action taken.
- D. The test sample (smear) shall be taken by the licensee using an approved leak test kit. Analysis of the test sample for leakage and/or contamination shall be performed by other persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
18. The following conditions pertain to devices received under General License provisions as described in item 6, subsection F:
- A. Sealed sources containing radioactive material authorized for distribution under a General License shall not be opened or removed from their source holders by the licensee.
- B. Installation, relocation, maintenance, repair, removal from service and initial radiation survey of devices containing radioactive material and installation, replacement and disposal of sealed sources containing radioactive material used in devices shall be performed only by persons specifically authorized by the U.S. Nuclear Regulatory Commission, a Licensing State, or an Agreement State to perform such services.
- C. The licensee shall maintain a record showing date of receipt, site of use and date and method of disposal.
- D. Required test for leakage and/or contamination of sealed sources containing radioactive material shall be performed by persons specifically authorized by the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State to perform such services.

(See Page 5)

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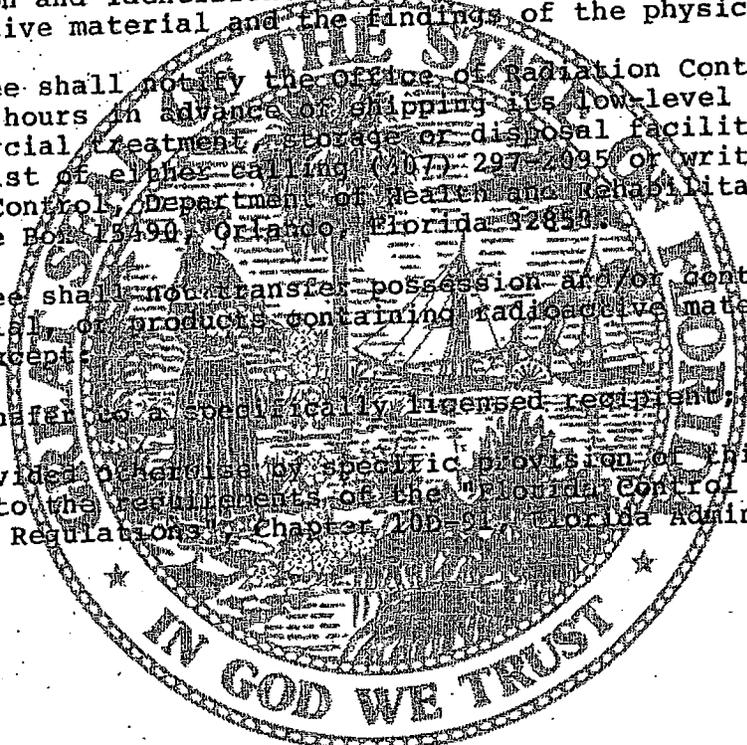
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 5 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 40
(3K) (A91)

19. At six month intervals an inventory and inspection of all devices containing radioactive material shall be conducted which determine, where applicable, at least the general physical condition of the device, proper operation and adequate posting of radiation caution signs. Records shall be maintained for inspection by the Department of Health and Rehabilitative Services and shall include the date of inventory; the location and identification of the devices; the quantity and kinds of radioactive material and the findings of the physical inspections.
20. The licensee shall notify the Office of Radiation Control at least forty eight (48) hours in advance of shipping its low-level radioactive waste to a commercial treatment, storage or disposal facility. Notification shall consist of either calling (813) 297-2095 or writing the Office of Radiation Control, Department of Health and Rehabilitative Services, Post Office Box 13490, Orlando, Florida 32816.
21. The licensee shall not transfer possession and/or control of radioactive material or products containing radioactive material as a contaminant except:
 - A. By transfer to a specifically licensed recipient; or
 - B. As provided otherwise by specific provision of this license pursuant to the requirements of the Florida Control of Radiation Hazard Regulations, Chapter 70D-01, Florida Administrative Code.



(See Page 6)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 6 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 40
(3K) (A91)

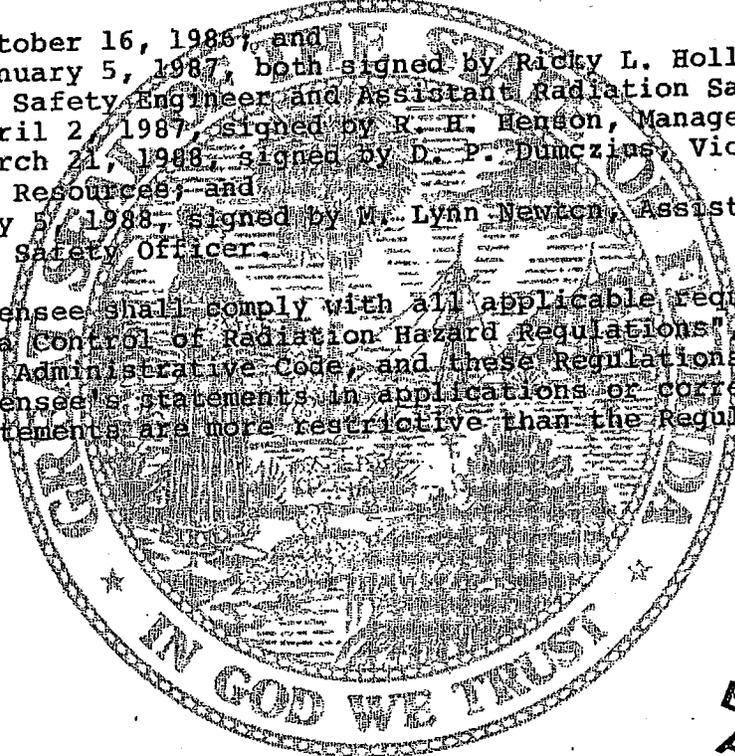
#43

22. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, 8 and 9 of this license in accordance with statements, representations and procedures contained in the licensee's application dated December 17, 1985, signed by E. P. Granberry, Jr., Manager, Industrial Hygiene & Safety Engineering, and correspondence dated:

October 16, 1985; and
January 5, 1987, both signed by Ricky L. Hollis, Sr., Senior Safety Engineer and Assistant Radiation Safety Officer;
April 2, 1987, signed by R. H. Henson, Manager;
March 21, 1988, signed by D. P. Dumczins, Vice President Human Resources; and
May 5, 1988, signed by M. Lynn Newton, Assistant Radiation Safety Officer.

B. The licensee shall comply with all applicable requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, Florida Administrative Code, and these Regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the Regulations.

#41
23.



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For the Office of Radiation Control

[Signature]
Randy R. Aldridge
Public Health Physicist

Date July 19, 1988

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

81014-678

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 1 of 2 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 41
(3K) (A91)

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
Post Office Box 2691
State Road 710 & Pratt & Whitney Rd.
West Palm Beach, FL 33402

With reference to correspondence dated October 10, and November 1, 1988, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD ITEMS 6, 7, 8 and 9, Subitems G and H TO READ:

5. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
G. Cobalt 56	G. Impregnated into a bearing surface	G. 10 impregnated, not to exceed 10 microcuries per bearing.
H. Hydrogen 3	H. Titanium tritide foil (Safety Light Corp. Model LAB 508-3)	H. 4 sources; not to exceed 150 milli-curies each.

9. Authorized Use.

- G. To be used in Spire Corporations, Spi-Wear 200 bearing diagnostic system to wear on bearing surfaces.
- H. To be used in Safety Light Corporation Scentograph, automated gas chromatograph for chemical analysis.

(See Page 2)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 2 of 2 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 41
(3K) (A91)

TO CHANGE CONDITION 12 TO READ:

CONDITIONS

- 12. A. Licensed material in Items 6, 7, 8 and 9, Subitem A shall be used by or under the supervision of Arthur R. Cox.
- B. Licensed material in Items 6, 7, 8 and 9, Subitem B shall be used by or under the supervision of D. H. Lane.
- C. Licensed material in Items 6, 7, 8 and 9, Subitem C shall be used by or under the supervision of Alson D. Owen.
- D. Licensed material in Items 6, 7, 8 and 9, Subitem D shall be used by or under the supervision of Marc E. Rippen.
- E. Licensed material in Items 6, 7, 8 and 9, Subitem E shall be used by or under the supervision of Robert E. Hendricks.
- F. Licensed material in Items 6, 7, 8 and 9, Subitem F shall be used by individuals approved by the Radiation Safety Officer. Copies of this approval will be kept on file for inspection.
- G. Licensed material in Items 6, 7, 8 and 9, Subitems G and H shall be used by or under the supervision of M. Lynn Newton.

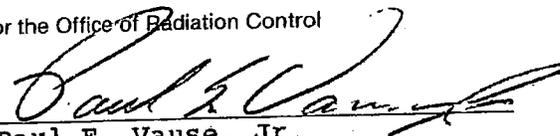
TO ADD CONDITION 23 TO READ:

CONDITIONS

- 23. Detector cells containing hydrogen 3 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 325 degrees Celsius.

Best Copy Available

For the Office of Radiation Control



Paul E. Vause, Jr.
Public Health Physicist

Date November 28, 1988

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 1 of 2 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1 -
AMENDMENT NO. 42
(3K) (A91)

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
Post Office Box 2691
State Road 710 & Pratt & Whitney Rd.
West Palm Beach, FL 33402

With reference to correspondence dated February 15, 1989, State of Florida
Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD ITEMS 6, 7, 8 AND 9, SUBITEMS I, J AND K TO READ:

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
I. Manganese 54	I. Impregnated into a bearing surface	I. 10 impregnated bearings not to exceed 10 micro- curies per bearing.
J. Cobalt 57	J. Contaminant of im- pregnated bearing	J. Less than one microcurie.
K. Cobalt 58	K. Contaminant of im- pregnated bearing	K. Less than one microcurie.

9. Authorized Use.

I. through K. To be used in a Spire Corporation's Spi-Wear 200 bearing
diagnostic system to test the wear on bearing surfaces.

(See Page 2)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 2 of 2 Pages

License Number 90-1
AMENDMENT NO. 42
(3K) (A91)

TO CHANGE CONDITION 12 TO READ:

CONDITIONS

- 12. A. Licensed material in Items 6, 7, 8 and 9, Subitem A shall be used by or under the supervision of Arthur R. Cox.
- B. Licensed material in Items 6, 7, 8 and 9, Subitem B shall be used by or under the supervision of D. H. Lane.
- C. Licensed material in Items 6, 7, 8 and 9, Subitem C shall be used by or under the supervision of Alson D. Owen.
- D. Licensed material in Items 6, 7, 8 and 9, Subitem D shall be used by or under the supervision of Marc E. Rippen.
- E. Licensed material in Items 6, 7, 8 and 9, Subitem E shall be used by or under the supervision of Robert E. Hendricks.
- F. Licensed material in Items 6, 7, 8 and 9, Subitem F shall be used by individuals approved by the Radiation Safety Officer. Copies of this approval will be kept on file for inspection.
- G. Licensed material in Items 5, 7, 8 and 9, Subitems G, H, I, J and K shall be used by or under the supervision of M. Lynn Newton.

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For the Office of Radiation Control

Paul E. Vause, Jr.
Paul E. Vause, Jr.
Public Health Physicist

Date March 24, 1989

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 1 of 1 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 43
(3K) (A91)

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
Post Office Box 2691
State Road 710 & Pratt & Whitney Rd.
West Palm Beach, FL 33402

With reference to correspondence dated March 14, 1989, State of Florida
Radioactive Materials License Number 90-1 is hereby amended as follows:

TO CHANGE CONDITION 22 TO READ:

CONDITIONS

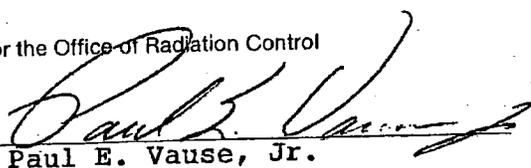
22. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, 8 and 9 of this license in accordance with statements, representations and procedures contained in the licensee's application dated December 17, 1985, signed by E. P. Granberry, Jr., Manager, Industrial Hygiene & Safety Engineering, and correspondence dated:

October 16, 1986; and
January 5, 1987, both signed by Ricky L. Hollis, Sr., Senior Safety Engineer and Assistant Radiation Safety Officer;
April 2, 1987, signed by R. H. Henson, Manager;
March 21, 1988, signed by D. P. Dumczius, Vice President Human Resources;
May 5, 1988; and
March 14, 1989, both signed by M. Lynn Newton, Assistant Radiation Safety Officer.

B. The licensee shall comply with all applicable requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, Florida Administrative Code, and these Regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the Regulations.

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For the Office of Radiation Control



Paul E. Vause, Jr.
Public Health Physicist

Date April 11, 1989

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

90809-613

Page 1 of 7 Pages
 AMENDMENT NO. 44

RADIOACTIVE MATERIALS LICENSE

Pursuant to Chapter 404, Florida Statutes, and Chapter 10D-91, Florida Administrative Code, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to receive, acquire, possess and transfer the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. Name: UNITED TECHNOLOGIES CORPORATION Pratt & Whitney Aircraft Group Government Products Division</p> <p>2. Address: Post Office Box 2691 State Road 710 & Pratt & Whitney Rd. West Palm Beach, FL 33402</p>	<p>With reference to correspondence dated 8/1/89, State of Florida Radioactive Materials</p> <p>3. License Number: 90-1 is hereby amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date: January 31, 1991</p> <hr/> <p>5. Category: 3K</p>
---	--

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Thorium 232	A. Thoriated nickel or cobalt (2% thorium oxide by volume)	A. 200 pounds thorium oxide.
B. Krypton 85	B. Krypton 85 permeated jet engine parts	B. 25 millicuries
C. Cadmium 109	C. Sealed source (Kevex Analytical Instrument Division, Model AN-109)	C. 2 sources; not to exceed 20 millicuries each.
D. Nickel 63	D. Sealed sources (New England Nuclear Model NER-004)	D. 1 source not to exceed 10 millicuries.
E. Cesium 137	E. Sealed sources (Ohmatt Corporation Models A-2100 or A-2102)	E. 1 source not to exceed 80 millicuries.
F. Radioactive material distributed to a General Licensee per 10D-91.306(1) and (4), F.A.C.	F. Sealed source(s) and/or contained source(s)	F. No single source to exceed that quantity authorized for the General License device.

(See Page 2)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 2 of 7 Pages

License Number 90-1
AMENDMENT NO. 44
(3K) (A91)

- | | | |
|---|---|--|
| 6. Radioactive material (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
| G. Cobalt 56 | G. Impregnated into a bearing surface | G. 10 impregnated bearings not to exceed 10 microcuries per bearing. |
| H. Hydrogen 3 | H. Titanium tritide foil (Safety Light Corp. Model LAB 508-3) | H. 4 sources; not to exceed 150 millicrouries each. |
| I. Manganese 54 | I. Impregnated into a bearing surface | I. 10 impregnated bearings not to exceed 10 microcuries per bearing. |
| J. Cobalt 57 | J. Contaminant of impregnated bearing | J. Less than one microcurie. |
| K. Cobalt 58 | K. Contaminant of impregnated bearing | K. Less than one microcurie. |

9. Authorized Use.

- A. Evaluation of thoriated cobalt or nickel as material for use in engine components.
- B. Surface studies of engine parts.
- C. To be used in Kevex Analytical Instrument, Model 6600 for sample analysis.
- D. To be used in a Hewlett Packard Instrument Company Model 902 gas chromatograph for sample analysis.
- E. To be used in an Ohmart Corporation Model SR-A source holder as a component of a level detection device.
- F. To be used in devices approved for receipt under General License provisions as described in Item 6.F., above.

(See Page 3)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 3 of 7 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 44
(3K) (A91)

9. Authorized Use. (continued)

- G. To be used in Spire Corporations, Spi-Wear 200 bearing diagnostic system to test the wear on bearing surfaces.
- H. To be used in Safety Light Corporation Scentograph, automated gas chromatograph for chemical analysis.
- I. through K. To be used in a Spire Corporation's Spi-Wear 200 bearing diagnostic system to test the wear on bearing surfaces.

CONDITIONS

- 10. The authorized place of use shall be at licensee's facility located at the address in Item 2, above.
- 11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to Section 404.161, Florida Statutes. Also, violations may warrant an administrative fine of up to \$1,000.00 per violation per day, pursuant to Section 404.162, Florida Statutes.
- 12.
 - A. Licensed material in Items 6, 7, 8 and 9, Subitem A shall be used by or under the supervision of Arthur R. Cox.
 - B. Licensed material in Items 6, 7, 8 and 9, Subitem B shall be used by or under the supervision of D. H. Lane.
 - C. Licensed material in Items 6, 7, 8 and 9, Subitem C shall be used by or under the supervision of Alson D. Owen.
 - D. Licensed material in Items 6, 7, 8 and 9, Subitem D shall be used by or under the supervision of Michael J. Gehron.
 - E. Licensed material in Items 6, 7, 8 and 9, Subitem E shall be used by or under the supervision of Robert E. Hendricks.
 - F. Licensed material in Items 6, 7, 8 and 9, Subitem F shall be used by individuals approved by the Radiation Safety Officer. Copies of this approval will be kept on file for inspection.
 - G. Licensed material in Items 6, 7, 8 and 9, Subitems G, H, I, J and K shall be used by or under the supervision of M. Lynn Newton.

(See Page 4)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 4 of 7 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 44
(3K) (A91)

13. The licensee shall comply with the provisions of Chapter 10D-91, Florida Administrative Code, Part X, "Notices, Instructions and Reports to Workers; Inspections" and Part IV, "Standards for Protection Against Radiation".
14. Sealed sources containing licensed material shall not be opened nor removed from their respective source holders by the licensee.
15. Detector cells containing licensed material shall not be opened nor the foil source removed from the detector cell by the licensee.
16. A. Detector cells containing hydrogen 3 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 325 degrees Celsius.
B. Detector cells containing nickel 63 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 350 degrees Celsius.
17. A. (1) Each sealed source containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months, except that detector cells described in Items 6, 7, 8 and 9, Subitem D may be tested for leakage and/or contamination at intervals not to exceed thirty six (36) months. In the absence of a certificate from a transferor, indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
(2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department of Health and Rehabilitative Services.

(See Page 5)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 5 of 7 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 44
(3K) (A91)

17. C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department of Health and Rehabilitative Services regulations. A report shall be filed within five (5) days of the test with the Office of Radiation Control, Radioactive Materials Program, Department of Health and Rehabilitative Services, 1317 Winewood Boulevard, Tallahassee, Florida 32399-0700 describing the equipment involved, the test method used, the test results and the corrective action taken.
- D. The test sample (smear) shall be taken by the licensee using an approved leak test kit. Analysis of the test sample for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
18. The following conditions pertain to device(s) received under General License provisions as described in Item 6, subitem E:
- A. Sealed sources containing radioactive material authorized for distribution under a General License shall not be opened or removed from their source holders by the licensee.
- B. Installation, relocation, maintenance, repair, removal from service and initial radiation survey of devices containing radioactive material and installation, replacement and disposal of sealed sources containing radioactive material used in devices shall be performed only by persons specifically authorized by the U.S. Nuclear Regulatory Commission, a Licensing State, or an Agreement State to perform such services.
- C. The licensee shall maintain a record showing date of receipt, site of use and date and method of disposal.
- D. At annual intervals, an inventory and inspection of all devices containing radioactive material shall be conducted which determine, where applicable, at least the general physical condition of the device, proper shutter operation and adequate posting of radiation caution signs. Records shall be maintained for inspection by the Division and shall include the date of inventory; the location and identification of the devices; the quantity and kinds of radioactive material and the findings of the physical inspection.

(See Page 6)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 6 of 7 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 44
(3K) (A91)

18. E. Required test for leakage and/or contamination of sealed sources containing radioactive material shall be performed by persons specifically authorized by the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State to perform such services.
19. At six month intervals an inventory and inspection of all devices containing radioactive material shall be conducted which determine, where applicable, at least the general physical condition of the device, proper shutter operation and adequate posting of radiation caution signs. Records shall be maintained for inspection by the Department of Health and Rehabilitative Services and shall include the date of inventory; the location and identification of the devices; the quantity and kinds of radioactive material and the findings of the physical inspections.
20. The licensee shall notify the Office of Radiation Control at least forty-eight (48) hours in advance of shipping its low-level radioactive waste to a commercial treatment, storage or disposal facility. Notification shall consist of either calling (407) 297-2095 or writing the Office of Radiation Control, Department of Health and Rehabilitative Services, Post Office Box 680069, Orlando, Florida 32868-0069.
21. The licensee shall not transfer possession and/or control of radioactive material, or products containing radioactive material as a contaminant except:
 - A. By transfer to a specifically licensed recipient; or
 - B. As provided otherwise by specific provision of this license pursuant to the requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, Florida Administrative Code.

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(See Page 7)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

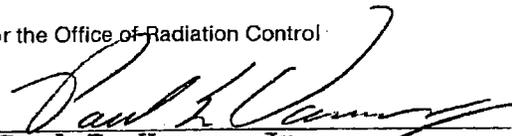
Page 7 of 7 Pages

License Number 90-1
AMENDMENT NO. 44
(3K) (A91)

22. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, 8 and 9 of this license in accordance with statements, representations and procedures contained in the licensee's application dated December 17, 1985, signed by E.P. Granberry, Jr., Manager, Industrial Hygiene & Safety Engineering, and correspondence dated:
- October 16, 1986; and
 January 5, 1987, both signed by Ricky L. Hollis, Sr., Senior Safety Engineer and Assistant Radiation Safety Officer;
 April 2, 1987, signed by R. H. Henson, Manager;
 March 21, 1988, signed by D. P. Dumczius, Vice President, Human Resources;
 May 5, 1988; and
 March 14, 1989, both signed by M. Lynn Newton, Assistant Radiation Safety Officer.
- B. The licensee shall comply with all applicable requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, Florida Administrative Code, and these Regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the Regulations.

Best Copy Available

For the Office of Radiation Control


Paul E. Vause, Jr.
Public Health Physicist

Date September 28, 1989

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

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Page 1 of 6 Pages

RADIOACTIVE MATERIALS LICENSE

AMENDMENT NO. 45

Pursuant to Chapter 404, Florida Statutes, and Chapter 10D-91, Florida Administrative Code, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to receive, acquire, possess and transfer the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

<p align="center">Licensee</p> <p>1. Name: UNITED TECHNOLOGIES CORPORATION Pratt & Whitney Government Engine Business</p> <p>2. Address: Post Office Box 109600 Mail Stop 716-22 West Palm Beach, FL 33410-9600</p>	<p>With reference to application dated 11/28/90, State of Florida Radioactive Materials 3. License Number: 90-1 is hereby renewed in its entirety to read as follows:</p> <hr/> <p>4. Expiration date: January 31, 1996</p> <hr/> <p>5. Category: 3K</p>
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6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Thorium 232	A. Thoriated nickel or cobalt (2% thorium oxide by volume)	A. 200 pounds thorium oxide.
B. Cadmium 109	B. Sealed source (Isotope Products Model AN-109)	B. 2 sources; not to exceed 20 milluries each.
C. Nickel 63	C. Sealed source (New England Nuclear Model NER-004)	C. 2 sources; not to exceed 10 milluries each.
D. Cesium 137	D. Sealed source (Ohmart Corp. Model A-2100 or A-2102)	D. 1 source not to exceed 80 milluries.
E. Hydrogen 3	E. Titanium tritide foil (Safety Light Corp. Model LAB 508-3)	E. 2 source; not to exceed 150 milluries each.
F. Radioactive material distributed to a General Licensee per 10D-91.306(1) and (4), F.A.C.	F. Sealed source(s) and/or contained source(s)	F. No single source to exceed that quantity authorized for the General License device.

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(See Page 2)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 2 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 45
(3K) (A96)

9. Authorized Use.

- A. To be used for evaluation of thoriated cobalt or nickel as material for use in engine components.
- B. To be contained in a Kevex Corp. Model 0102 source holder, used in a Kevex Corp. Model Analyst 6600 spectrochemical analyzer for sample analysis.
- C. To be contained in a Packard Instrument Company Model 902 detector cell, used in a Chrompack-Packard Model 438 S gas chromatograph for sample analysis.
- D. To be used in an Ohmart Corp. Model SR-A source holder as a component of an Ohmart Corp. Model Levelart 1000 level detection device.
- E. To be contained in a Sentex Sensing Technology, Inc. Model 50319 detector cell, used in a Sentex Sensing Technology, Inc. Model Scentograph gas chromatograph for sample analysis.
- F. To be used in devices approved for receipt under General License provisions as described in Item 6.F., above.

CONDITIONS

- 10. The authorized place of use is the licensee's facility located at 17900 Beeline Highway, Jupiter, Florida.
- 11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to section 404.161, Florida Statutes. Also, violations may warrant an administrative fine of up to \$1,000.00 per violation per day, pursuant to section 404.162, Florida Statutes.
- 12.
 - A. Licensed material in Items 6, 7, 8 and 9, Subitem A shall be used by or under the supervision of Arthur R. Cox.
 - B. Licensed material in Items 6, 7, 8 and 9, Subitem B shall be used by or under the supervision of Alson D. Owen.
 - C. Licensed material in Items 6, 7, 8 and 9, Subitem C shall be used by or under the supervision of Michael J. Gehron.
 - D. Licensed material in Items 6, 7, 8 and 9, Subitem D shall be used by or under the supervision of Robert E. Hendricks.

(See Page 3)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 3 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 45
(3K) (A96)

- 44
12. E. Licensed material in Items 6, 7, 8 and 9, Subitem E shall be used or under the supervision of Lynn N. Hamel.
- F. Licensed material in Items 6, 7, 8 and 9, Subitem F shall be used by individuals approved by the Radiation Safety Officer. Copies of this approval will be kept on file for inspection.
13. The licensee shall comply with the provisions of Chapter 10D-91, Florida Administrative Code (F.A.C.), Part X, "Notices, Instructions and Reports to Workers; Inspections" and Part IV, "Standards for Protection Against Radiation."
14. Sealed sources containing licensed material shall not be opened nor removed from their respective source holders by the licensee.
15. Detector cells containing licensed material shall not be opened nor the foil source removed from the detector cell by the licensee.
16. A. Detector cells containing hydrogen 3 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 325 degrees Celsius.
- B. Detector cells containing nickel 63 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 330 degrees Celsius.
17. A. (1) Each sealed source containing licensed material, other than hydrogen 3, with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed 6 months, except that detector cells described in Items 6, 7, 8 and 9, Subitem C may be tested for leakage and/or contamination at intervals not to exceed 36 months. In the absence of a certificate from a transferor, indicating that a test has been made within 6 months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

(See Page 4)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 4 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 45
(3K) (A96)

17. B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department of Health and Rehabilitative Services.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department of Health and Rehabilitative Services regulations. A report shall be filed within 5 days of the test with the Office of Radiation Control, Radioactive Materials Program, Department of Health and Rehabilitative Services, 1317 Winewood Boulevard, Tallahassee, Florida 32399-0700 describing the equipment involved, the test method used, the test results and the corrective action taken.
- D. The test sample (smear) shall be taken by the licensee using an approved leak test kit. Analysis of the test sample for leakage and/or contamination shall be performed by the manufacturer or by other persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
18. The following conditions pertain to device(s) received under General License provisions as described in Item 6, Subitem F:
- A. Sealed sources containing radioactive material authorized for distribution under a General License shall not be opened nor removed from their source holders by the licensee.
- B. Installation, relocation, maintenance, repair, removal from service and initial radiation survey of devices containing radioactive material and installation, replacement and disposal of sealed sources containing radioactive material used in devices shall be performed only by persons specifically authorized by the U.S. Nuclear Regulatory Commission, a Licensing State, or an Agreement State to perform such services.
- C. The licensee shall maintain a record showing dates of receipt, sites of use and dates and methods of disposal.

(See Page 5)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 5 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 45
(3K) (A96)

18. D. At intervals not to exceed 12 months, an inventory and inspection of all devices containing radioactive material shall be conducted which determine, where applicable, at least the general physical condition of the device, proper shutter operation and adequate posting of radiation caution signs. Records shall be maintained for inspection by the Department of Health and Rehabilitative Services and shall include the date of inventory; the location and identification of the devices; the quantity and kinds of radioactive material and the findings of the physical inspection.
- E. Required test for leakage and/or contamination of sealed sources containing radioactive material shall be performed by persons specifically authorized by the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State to perform such services.
19. At intervals not to exceed 6 months, an inventory and inspection of all devices containing radioactive material shall be conducted which determine, where applicable, at least the general physical condition of the device, proper shutter operation and adequate posting of radiation caution signs. Records shall be maintained for inspection by the Department of Health and Rehabilitative Services and shall include the date of inventory; the location and identification of the devices; the quantity and kinds of radioactive material and the findings of the physical inspections.
20. The licensee shall notify the Office of Radiation Control at least 48 hours in advance of shipping its low-level radioactive waste to a commercial treatment, storage or disposal facility. Notification shall consist of either calling (407) 297-2095 or writing the Office of Radiation Control, Department of Health and Rehabilitative Services, Post Office Box 680069, Orlando, Florida 32868-0069.
21. The licensee shall not transfer possession and/or control of radioactive material, or products containing radioactive material as a contaminant except:
- A. By transfer to a specifically licensed recipient; or
- B. As provided otherwise by specific provision of this license pursuant to the requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, F.A.C..

(See Page 6)

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STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 6 of 6 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 45
(3K) (A96)

22. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, 8 and 9 of this license in accordance with statements, representations and procedures contained in the licensee's application dated November 28, 1990, signed by David H. Lane, Manager, Industrial Hygiene/Safety Engineering, and correspondence dated February 6, 1991, signed by Lynn N. Hamel, Assistant Radiation Safety Officer.
- B. The licensee shall comply with all applicable requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, F.A.C., and these regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the regulations.

Best Copy Available

For the Office of Radiation Control

Walter L. Cofer

Walter L. Cofer
Public Health Physicist

Date April 12, 1991

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

Control No. 930618-620
 Page 1 of 5 Page(s)
 AMENDMENT NO. 47

**STATE OF FLORIDA
 DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
 OFFICE OF RADIATION CONTROL**

RADIOACTIVE MATERIALS LICENSE

Pursuant to Chapter 404, Florida Statutes, and Chapter 10D-91, Florida Administrative Code (F.A.C.), and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to receive, acquire, possess and transfer the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the state of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

Licensee 1. Name: UNITED TECHNOLOGIES CORPORATION Pratt & Whitney Government Engine Business	With ref. to corr. dated 6/15, 7/6, & 8/23/93, State of Florida Radioactive Materials 3. License Number: 90-1 is hereby amended in its entirety to read as follows:
2. Address: P. O. Box 109600 Mail Stop 716-22 West Palm Beach, FL 33410-9600	4. Expiration Date: January 31, 1996 5. Category: 3K

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Americium 241/ strontium 90	A. Sealed source (Amersham Corp. Product Code QCRB1282)	A. 4 sources; not to exceed 22 nano-curies each
B. Cadmium 109	B. Sealed source (Isotope Products Laboratories, Inc. Model AN-109)	B. 2 sources; not to exceed 20 milli-curies each
C. Hydrogen 3	C. Titanium tritide foil source (Safety Light Corp. Model LAB 508-3)	C. 2 sources; not to exceed 150 milli-curies each
D. Thorium 232	D. Thoriated nickel or cobalt (2% thorium oxide by volume)	D. 200 pounds thorium oxide
E. Radioactive material distributed to a general licensee per 10D-91.306(1) and (4), F.A.C.	E. Sealed and/or contained source	E. No single source to exceed that quantity authorized for the general license

Control No. 930618-620
Page 2 of 5 Page(s)

License Number 90-1
AMENDMENT NO. 47
(3K) Expiration date: 1/31/96

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE

9. Authorized use

- A. To be used as calibration/reference sources.
- B. To be contained in Kevex Corp. Model 0102 source holders, used in Kevex Corp. Model Analyst 6600 spectrochemical analyzers for sample analysis.
- C. To be contained in Sentex Sensing Technology, Inc. Model 50319 electron capture detector cells, used in Sentex Sensing Technology, Inc. Model Scentograph gas chromatographs for sample analysis.
- D. To be used for evaluation of thoriated cobalt or nickel as material for use in engine components.
- E. To be used in devices approved for receipt under general license provisions as described in item 6.E.

CONDITIONS

10. The authorized place of use is the licensee's facility located at 17900 Beeline Highway in Jupiter, Florida.
11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to section 404.161, Florida Statutes. Also, violations may warrant an administrative fine of up to \$1,000.00 per violation per day, pursuant to section 404.162, Florida Statutes.
12.
 - A. Licensed material described in items 6, 7, 8 and 9, subitems A, B and C shall be used by or under the supervision of David H. Lane.
 - B. Licensed material in items 6, 7, 8 and 9, subitem D shall be used by or under the supervision of Arthur R. Cox.
 - C. Licensed material in items 6, 7, 8 and 9, subitem E shall be used by individuals approved by the radiation safety officer. Documentation of this approval shall be available for inspection by the department.
 - D. The radiation safety officer is David H. Lane.

Control No. 930618-620
Page 3 of 5 Page(s)

License Number 90-1
AMENDMENT NO. 47
(3K) Expiration date: 1/31/96

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE

13. The licensee shall comply with the provisions of Chapter 10D-91, F.A.C., Part X, "Notices, Instructions and Reports to Workers; Inspections" and Part IV, "Standards for Protection Against Radiation."
14. The licensee shall not transfer possession or control of radioactive material, or products containing radioactive material as a contaminant except:
 - A. By transfer to a specifically licensed recipient; or
 - B. As provided otherwise by specific provision of his license pursuant to the requirements of Chapter 10D-91, F.A.C.
15. Radioactive material transported on public thoroughfares shall be packaged, prepared for shipment and transported in accordance with Title 49, Code of Federal Regulations and Chapter 10D-91, F.A.C.
16. The licensee shall assure that each sealed source is tested for leakage or contamination and follow the appropriate actions as required by section 10D-91.1404, F.A.C. Licensed material shall be tested at least semiannually. The test sample (smear) shall be taken by the licensee using an approved leak test kit. Analysis of the test sample shall be performed by individuals who are licensed by the department, NRC, agreement state, or licensing state to provide these services. The licensee is required to retain leak test records containing the manufacturer's name, model and serial number of each sealed source tested, identity of each sealed source radionuclide and its estimated activity, the measured activity of each test sample expressed in microcuries, the date of the test and signature of the radiation safety officer or designee. The records shall be maintained for 3 years for inspection by the department.
17. The licensee shall conduct a physical inventory and inspection at least semiannually to account for all sealed sources received and possessed under this license as required by section 10D-91.1405, F.A.C. Inventory records shall be maintained for 3 years from the date of the inventory for inspection by the department, and shall include the manufacturer's name, model and serial numbers of each sealed source, the identity of each sealed source radionuclide and its estimated activity, the location of each sealed source, the date of the inventory and the signature of the radiation safety officer or designee.

Control No. 930618-620
Page 4 of 5 Page(s)

License Number 90-1
AMENDMENT NO. 47
(3K) Expiration date: 1/31/96

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE

18. Detector cells containing hydrogen 3 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 325 degrees Celsius.
19. The licensee shall comply with section 10D-91.1410, F.A.C., listing additional requirements for device(s) received under general license provisions as described in items 6, 7, 8 and 9, subitem E. The licensee shall conduct a physical inventory and inspection at least annually to account for all sealed sources received and possessed under this license as required in section 10D-91.1405, F.A.C. Inventory records shall be maintained for 3 years from the date of the inventory for inspection by the department, and shall include the manufacturer's name, model and serial numbers of each sealed source, the identity of each sealed source radionuclide and its estimated activity, the location of each sealed source, the date of the inventory and the signature of the radiation safety officer of designee.
20. The licensee shall notify the Office of Radiation Control at least 48 hours in advance of shipping its low-level radioactive waste to a commercial treatment, storage or disposal facility. Notification shall consist of either calling (407) 297-2095 or writing the Office of Radiation Control, Department of Health and Rehabilitative Services, Post Office Box 680069, Orlando, Florida 32868-0069.
21. ⁴⁵⁰ A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in items 6, 7, 8 and 9 of this license in accordance with statements, representations, and procedures contained in the licensee's application dated November 28, 1990, signed by David H. Lane, Manager, Industrial Hygiene/Safety Engineering, and correspondence dated:
- February 6, 1991, signed by Lynn N. Hamel, Assistant Radiation Safety Officer; and
August 17, 1993, signed by John P. Balaguer, President.

Control No. 930618-620
Page 5 of 5 Page(s)

License Number 90-1
AMENDMENT NO. 47
(3K) Expiration date: 1/31/96

**STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL**

RADIOACTIVE MATERIALS LICENSE

21. B. The licensee shall comply with all applicable requirements of Chapter 10D-91, Florida Administrative Code, and these regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the regulations.

Date _____

SEP 09 1993

For the Office of Radiation Control

Original Signed By
Walter L. Cofer

Walter L. Cofer
Public Health Physicist
1317 Winewood Blvd.
Tallahassee, FL 32399-0700
(904) 487-2437

Control No. 930929-1046
Page 1 of 1 Page(s)

License Number 90-1
AMENDMENT NO. 48
Category: [3K]
Expiration date: 1/31/96

**STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL**

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney
Government Engine Business
P.O. Box 109600
Mail Stop 716-22
West Palm Beach, FL 33410-9600

With reference to correspondence dated September 22, 1993, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO CHANGE ITEMS 6, 7, 8, AND 9, SUBITEM A TO READ:

6. Radioactive material
(element and mass number)

7. Chemical and/or physical form

8. Maximum quantity licensee
may possess at any one time

A. Americium 241/
cesium 137/
strontium 90

A. Sealed source (Amersham
Corp. Product Code
QCRB1282)

A. 4 sources; not to
exceed 432.48 nano-
curies each (21.624
nCi of Am-241;
Be, 397.882 nCi of
Cs-137, and 12.974
nCi of Sr-90)

9. Authorized use

A. To be used as calibration or reference source.

Date NOV 01 1993

For the Office of Radiation Control

Original Signed By
Walter L. Cofer
Walter L. Cofer
Public Health Physicist
1317 Winewood Blvd.
Tallahassee, FL 32399-0700
(904) 487-2437

File copy

Control No. 940218-160
Page 1 of 2 Page(s)
License Number 90-1
AMENDMENT NO. 49
Category: [3K]
Expiration date: 1/31/96

**STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL**

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney
Government Engine Business
P. O. Box 1096000
Mail Stop 716-22
West Palm Beach, FL 33410-9600

With reference to correspondence dated February 7, 1994, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD ITEMS 6, 7, 8, AND 9 SUBITEM F TO READ:

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
F. Gadolinium 153	F. Sealed source (Amersham Corp. Model GDC-CY1)	F. 2 sources; not to exceed 1000 milluries each

9. Authorized use

F. One source to be used in a United Technologies Corporation Model DG-1 density gauge to measure the density of coatings applied to jet engine parts, and one source for exchanges.

TO CHANGE CONDITION 21 TO READ:

CONDITIONS

21. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in items 6, 7, 8 and 9 of this license in accordance with statements, representations, and procedures contained in the licensee's application dated November 28, 1990, signed by David H. Lane, Manager, Industrial Hygiene/Safety Engineering, and correspondence dated:

(See Page 2)

File copy

Control No. 940218-160
Page 2 of 2 Page(s)

License Number 90-1
AMENDMENT NO. 49
Category: [3K]
Expiration date: 1/31/96

**STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL**

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

21. A. February 6, 1991, signed by Lynn N. Hamel, Assistant Radiation Safety Officer;
August 17, 1993, signed by John P. Balaguer, President; and
February 7, 1994, signed by David H. Lane, Radiation Safety Officer.
- B. The licensee shall comply with all applicable requirements of Chapter 10D-91, Florida Administrative Code, and these regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the regulations.

Date _____

MAR 10 1994

For the Office of Radiation Control

**Original Signed By
Paul E. Vause**

Paul E. Vause, Jr.
Public Health Physicist
1317 Winewood Blvd.
Tallahassee, FL 32399-0700
(904) 487-2437

Control No. 940903-1305
Page 1 of 2 Page(s)
License Number 90-1
AMENDMENT NO. 50
Category: [3K]
Expiration date: 1/31/1996

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney
Government Engine Business
P. O. Box 1096000
Mail Stop 716-22
West Palm Beach, FL 33410-9600

With reference to correspondence dated September 27, 1994, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO CHANGE CONDITION 21 TO READ:

CONDITIONS

21. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in items 6, 7, 8 and 9 of this license in accordance with statements, representations, and procedures contained in the licensee's application dated November 28, 1990, signed by David H. Lane, Manager, Industrial Hygiene/Safety Engineering, and correspondence dated:
- February 6, 1991, signed by Lynn N. Hamel, Assistant Radiation Safety Officer;
 - August 17, 1993, signed by John P. Balaguer, President;
 - February 7, 1994; and
 - September 27, 1994, both signed by David Lane, Radiation Safety Officer.

(See Page 2)

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Control No. 940903-1305
Page 2 of 2 Page(s)

License Number 90-1
AMENDMENT NO. 50
Category: [3K]
Expiration date: 1/31/1996

**STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL**

**RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET**

21. B. The licensee shall comply with all applicable requirements of Chapter 10D-91, Florida Administrative Code, and these regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the regulations.

Issuance Date NOV 23 1994

For the Office of Radiation Control

ORIGINAL SIGNED BY
VONYA C. BOYKIN

Vonya C. Boykin
Public Health Physicist
1317 Winewood Blvd.
Tallahassee, FL 32399-0700
(904) 487-2437

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE

Pursuant to Chapter 404, Florida Statutes, and Chapter 10D-91, Florida Administrative Code (F.A.C.), and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to receive, acquire, possess and transfer the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the state of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. Name: UNITED TECHNOLOGIES CORPORATION PRATT & WHITNEY</p>	<p>With reference to application dated 12/13/1995, State of Florida Radioactive Materials</p> <p>3. License Number: 90-1 is hereby renewed in its entirety to read as follows:</p>
<p>2. Address: Government Engine Business P. O. Box 109600 Mail Stop 716-22 West Palm Beach, FL 33410-9600</p>	<p>4. Expiration Date: 01/31/2001</p> <p>5. Category: 3(K)</p>

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Gadolinium 153	A. Sealed Source (Amersham Corp. Model GDC-CY1)	A. 2 sources; not to exceed 1000 millicuries each.
B. Americium 241/ Cesium 137/ Strontium 90	B. Sealed source (Amersham Corp. Product Code QCRB1282)	B. 4 sources; not to exceed 432.48 nanocuries each (21.624 nCi of Am-241; 397.882 nCi of Cs-137 and 12.974 nCi of Sr-90)
C. Hydrogen 3	C. Titanium Tritide Foil (Safety Light Corp. Model LAB 508-3)	C. 2 source; not to exceed 150 millicuries each.

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
D. Radioactive material distributed to a general licensee per 10D-91.306(1) and (4), F.A.C.	D. Sealed and/or contained sources	D. No single source to exceed that quantity authorized for the general license

9-58 AUTHORIZED USES

- A. One source to be used in a United Technologies Corporation Model DG-1 density gauge to measure the density of coatings applied to jet engine parts, and one source for exchanges.
- B. To be used as a calibration and reference source.
- C. To be contained in a Sentex Sensing Technology, Inc., Model 50319 electron capture detector cells, used in a Sentex Sensing Technology, Inc., Model Scintograph gas chromatographs for sample analysis.
- D. To be used in devices approved for receipt under general license provisions as described in items 6, 7 and 8.

CONDITIONS

- 10. The authorized place of use and storage is the licensee's facility located 17900 Beeline Highway, Jupiter, Florida 33478.
- 11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to section 404.161, Florida Statutes. Also, violations may warrant an administrative fine of up to \$1,000.00 per violation per day, pursuant to section 404.162, Florida Statutes.
- 12. A. Licensed materials shall be used by, or under the supervision of, David H. Lane or Steven S. Harvath.
- 12. B. The radiation safety officer is David H. Lane.

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

13. The licensee shall comply with the provisions of Chapter 10D-91, F.A.C., Part X, "Notices, Instructions and Reports to Workers; Inspections" and Part IV, "Standards for Protection Against Radiation."
14. The licensee shall not transfer possession or control of radioactive material, or products containing radioactive material as a contaminant except:
 - A. By transfer to a specifically licensed recipient; or
 - B. As provided otherwise by specific provision of his license pursuant to the requirements of Chapter 10D-91, F.A.C.
15. Radioactive material transported on public thoroughfares shall be packaged, prepared for shipment and transported in accordance with Title 49, Code of Federal Regulations and Chapter 10D-91, F.A.C.
16. The licensee shall assure that each sealed source is tested for leakage or contamination and follow the appropriate actions as required by section 10D-91.1404, F.A.C. Licensed material shall be tested at least semiannually. The test sample (smear) shall be taken by the licensee using an approved leak test kit. Analysis of the test sample shall be performed by individuals who are licensed by the department, NRC, agreement state, or licensing state to provide these services. The licensee is required to retain leak test records containing the manufacturer's name, model and serial number of each sealed source tested, identity of each sealed source radionuclide and its estimated activity, the measured activity of each test sample expressed in microcuries, the date of the test and signature of the radiation safety officer or designee. The records shall be maintained for 3 years for inspection by the department.
17. The licensee shall conduct a physical inventory and inspection at least annually to account for all sealed sources received and possessed under this license as required by section 10D-91.1405, F.A.C. Inventory records shall be maintained for 3 years from the date of the inventory for inspection by the department, and shall include the manufacturer's name, model and serial numbers of each sealed source, the identity of each sealed source radionuclide and its estimated activity, the location of each sealed source, the date of the inventory and the signature of the radiation safety officer or designee.

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

- 18. The licensee shall notify the Office of Radiation Control at least 48 hours in advance of shipping its low-level radioactive waste to a commercial treatment, storage or disposal facility. Notification shall consist of either calling (407) 297-2095 or writing the Office of Radiation Control, Department of Health and Rehabilitative Services, Post Office Box 680069, Orlando, Florida 32868-0069.
- 19. The licensee shall comply with section 10D-91.1410, F.A.C., listing additional requirements for device(s) received under general license provisions as described in items 6, 7, 8 and 9. The licensee shall conduct a physical inventory and inspection at least annually to account for all sealed sources received and possessed under this license as required in section 10D-91.1405, F.A.C. Inventory records shall be maintained for 3 years from the date of the inventory for inspection by the department, and shall include the manufacturer's name, model and serial numbers of each sealed source, the identity of each sealed source radionuclide and its estimated activity, the location of each sealed source, the date of the inventory and the signature of the radiation safety officer of designee.
- 20. Detector cells containing hydrogen 3 shall only be used in conjunction with a properly operating temperature control mechanism which prevents the temperature from exceeding 325 degrees Celsius.
- 21. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in items 6, 7, 8, and 9 of this license in accordance with statements, representations and procedures contained in the licensee's application dated December 13, 1995, signed by David H. Lane, Manager Industrial Hygiene/Safety Engineering and correspondence received February 22, 1996, also signed by David H. Lane, Manager Industrial Hygiene/Safety Engineering.
- 21. B. The licensee shall comply with all applicable requirements of Chapter 10D-91, Florida Administrative Code, and these regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the regulations.

For the Office of Radiation Control

Issuance Date: MAR 29 1996

Original Signed By
Paul E. Vause
 Paul E. Vause, Jr.
 Health Physicist Supervisor
 1317 Winewood Boulevard
 Tallahassee, FL 32399-0700
 (904) 487-2437

License Number:	99-1	HQ COPY	Category:	(3)(K)
Amendment No.:	51			
Control Number:	951218-1-93	Page 4 of 4 Page(s)	Expiration Date:	01/31/2001

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTAL SHEET

UNITED TECHNOLOGIES CORPORATION/PRATT & WHITNEY
Government Engine Business
P.O. Box 109600
Mail Stop 716-22
West Palm Beach, FL 33410-9600

With reference to correspondence dated April 22, 1996, State of Florida Radioactive Materials License Number 90-1 is hereby amended as follows:

TO ADD ITEMS 6,7,8 AND 9, SUBITEM E TO READ:

6. Radioactive material (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
E. Cadium 109	E. Sealed source (Isotope Products Laboratories, Inc. Model AN-109)	E. 2 sources; not to exceed 20 millicuries each

9. AUTHORIZED USES

E. To be contained in Kevex Corp. Model 0102 source holders, used in Kevex Corp. Model Analyst 6600 spectrochemical analyzers for sample analysis.

For the Office of Radiation Control

ORIGINAL SIGNED BY
DEBBIE BRAY GILLEY

Issuance Date: MAY 13 1996

*Terminated
8/13/02*

Debbie Bray Gilley
Health Physicist
1317 Winewood Boulevard
Tallahassee, FL 32399-0700
(904) 487-2437

License Number: 90-1	HQ COPY	Category: (3K)
Amendment No.: 52	Page 1 of 1 Page(s)	Expiration Date: 01/31/2001
Control Number: 960429-0429		