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 188 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.

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>United Aircraft Corporation Pratt &amp; Whitney Aircraft Division</td>
<td>9-8351-1 (D64)</td>
<td>April 30, 1964</td>
<td></td>
</tr>
</tbody>
</table>

6. Byproduct material (element and mass number)

A. Strontium 90

7. Chemical and/or physical form

A. Sealed source (Nuclear-Chicago Corp. Model RG-32)

8. Maximum amount of radioactivity which licensee may possess at any one time

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 byproduct material from the Beta Ray Spectrometer.

(See page 2)
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)
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.
Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter I, Part 30, Licensing of Byproduct Material, and in reliance on statements and representations hereinafore 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
2. Address: Florida Research & Development Center
   - West Palm Beach, Florida

**In accordance with application dated January 23, 1964**

3. License number: 3-51-1

4. Expiration date: January 31, 1966

5. Reference No.

6. Byproduct material (element and mass number)

   A. Strontium-90

7. Chemical and/or physical form

   A. Sealed source (nuclear-Chicago Corp. Model NS-29) (see page 2)

8. Maximum amount of radioactivity which licensee may possess at any one time

   A. 1 source not to exceed 1 milliCi

9. Authorized use

   A. To be used on a General Electric Company Model 7631 Data ray spectrometer.

**Conditions**

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.

11. The license shall comply with the provisions of Title 10, Code of Federal Regulations, Chapter I, "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 Data 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 transferee indicating that a test has been made six months prior to the transferee, the sealed source shall not be put into use until tested.

(see page 2)
Continued From Page 1

** Bild: MATERIAL LICENSE
** Bild: Supplementary Sheet

** Bild: Best Copy Available

** Bild: Date: FEB 15 1964

** Bild: Condition:

1. 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 surface of the device in which the sealed source is permanently retained or stored on which one might expect contamination to accumulate. Records of test results shall be kept in units of microcuries and maintained for inspection by the Commission.

2. If the test reveals the presence of 0.005 microcurie or more of radioactive contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and regained or to be disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the test in accordance with 20CFR, part 100.31; 10CFR, parts 20, 21, 22, 35; and 101CFR, part 70. The test results and the corrective action taken shall be sent to the Commission in accordance with 20CFR, part 100.31; 10CFR, parts 20, 21, 22, 35; and 101CFR, part 70. A copy of such report shall also be sent to the Director, Division of Compliance, U.S. Atomic Energy Commission, Washington, D.C., listing the equipment involved, the test results, and the corrective action taken. A copy of such report shall also be sent to the Director, Division of Licensing and Regulation, U.S. Atomic Energy Commission, Washington, D.C., listing the equipment involved, the test results, and the corrective action taken. A copy of such report shall also be sent to the Director, Division of Compliance, U.S. Atomic Energy Commission, Washington, D.C., listing the equipment involved, the test results, and the corrective action taken. A copy of such report shall also be sent to the Director, Division of Compliance, U.S. Atomic Energy Commission, Washington, D.C., listing the equipment involved, the test results, and the corrective action taken.

For the U.S. Atomic Energy Commission

Original Signed by
Robert E. Brinkman
Division of Licensing and Regulation
Washington, D.C.
State 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.

<table>
<thead>
<tr>
<th>Licensee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

| 3. License number | 90 - 1 (A66) |
| 4. Expiration date | January 31, 1966 |
| 5. Reference number | 9-8351-1 |

<table>
<thead>
<tr>
<th>6. Radioactive material (element and mass number)</th>
<th>7. Chemical and/or physical form</th>
<th>8. Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Strontium 90 (See page 2)</td>
<td>A. Sealed Source (Nuclear-Chicago Corp. Model 80-32) (See page 2)</td>
<td>A. One source not to exceed 10 milllicuries (See page 2)</td>
</tr>
</tbody>
</table>

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 85 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.
State of Florida  
RADIOACTIVE MATERIALS LICENSE  
SUPPLEMENTARY SHEET

6. Radioactive material  
   (element and mass number)  

   B. Krypton 85  
   C. Cobalt 60  
   D. Thorium 232

7. Chemical and/or physical form  

   B. Sealed Sources  
      (Spark Gap Tubes)  
   C. Sealed Source  
      (Tracerlab, Inc.  
       Model R-31)  
   D. Thoriated Nickel  
      (2% thorium oxide  
       by volume)

8. Maximum quantity  
   licensee may possess  
   at any one time  

   B. 25 sources not  
      to exceed 30  
      microcuries per  
      tube  
   C. One source not to  
      exceed 1 milli-  
      curie  
   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 RQ-32 sealed source shall not be removed from the Beta Ray Spectrometer by  
    the licensee.

See page 3

Best Copy  
Available
State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

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.

Best Copy
Available

FOR THE FLORIDA STATE BOARD OF HEALTH

Date NOV 23 1964

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

E. Lead 210 (Radium D)

7. Chemical and/or physical form

G. Sealed Sources (Franklin GNO Corporation Models 130-5)

8. Maximum quantity licenses may possess at any one time

×

500 microcuries total (6 sealed sources of 50 microcuries each and one sealed source of 200 microcuries)

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
State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

CONDITIONS

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

FOR THE FLORIDA STATE BOARD OF HEALTH

by
Division of Radiological and
Occupational Health
Jacksonville, Florida 32201

Date

Nov 30 1968

Best Copy
Available
State 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.

<table>
<thead>
<tr>
<th>Licensee</th>
<th>In accordance with application dated December 14, 1985, signed by I. L. Davis</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Aircraft Corporation</td>
<td>5. License number 90 - 1 is hereby amended in its entirety to read as follows:</td>
</tr>
<tr>
<td>1. Name</td>
<td>4. Expiration date January 31, 1985</td>
</tr>
<tr>
<td>Pratt &amp; Whitney Aircraft Division</td>
<td></td>
</tr>
<tr>
<td>Florida Research &amp; Development Center</td>
<td></td>
</tr>
<tr>
<td>State Road 710 and Pratt &amp; Whitney</td>
<td></td>
</tr>
<tr>
<td>2. Address</td>
<td>5. Reference number</td>
</tr>
<tr>
<td>West Palm Beach, Florida</td>
<td></td>
</tr>
<tr>
<td>6. Radioactive material</td>
<td>7. Chemical and/or physical form</td>
</tr>
<tr>
<td>(element and mass number)</td>
<td>(See page 2)</td>
</tr>
<tr>
<td>(See page 2)</td>
<td>(See page 2)</td>
</tr>
<tr>
<td>8. Maximum quantity licensee may possess at any one time</td>
<td></td>
</tr>
<tr>
<td>9. Authorized use</td>
<td></td>
</tr>
<tr>
<td>(See page 2)</td>
<td></td>
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<tr>
<td>Best Copy Available ©</td>
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</tr>
</tbody>
</table>

**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. 5, 3, and 6 of Strontium 90, Krypton 85, and Cobalt 60 sealed sources shall be used by, or under the supervision of P. J. Lawson.

B. Thoriated nickel shall be used by, or under the supervision of J. F. Johnson.

C. through J. Load 210, Thallium 204, Radium D+H, Strontium 90, Rhodium 106, Promethium 147 sealed sources shall be used by, or under the supervision of Gordon G. Duncan.

(See page 2)
<table>
<thead>
<tr>
<th>No.</th>
<th>Radioactive Material</th>
<th>Description</th>
<th>Amendment No. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Strontium 90</td>
<td>- Sealed Source (Nuclear-Chicago Corp. Model RS-52)</td>
<td>A. One source not to exceed 10 millicuries</td>
</tr>
<tr>
<td>7.</td>
<td>Krypton 85</td>
<td>- Sealed Source (Spark Gap Tubes)</td>
<td>B. Fifty sources not to exceed 30 microcuries per tube</td>
</tr>
<tr>
<td>8.</td>
<td>Cobalt 60</td>
<td>- Sealed Source (Tracerlab, Inc. Model R-31)</td>
<td>C. One source not to exceed 1 millicurie</td>
</tr>
<tr>
<td>9.</td>
<td>Thorium 232</td>
<td>- Thoriated Nickel (2% thorium oxide by volume)</td>
<td>D. 200 pounds of thorium oxide</td>
</tr>
<tr>
<td>10.</td>
<td>Lead 210 (Radium B)</td>
<td>- Sealed Sources (Franklin GMD Corp. Models 130-8)</td>
<td>E. Five sources of 0.3 millicuries each One source of 100 microcuries One source of 120 microcuries</td>
</tr>
<tr>
<td>11.</td>
<td>Thallium 204</td>
<td>- Sealed Source (Minnesota Mining &amp; Manufacturing Co. Model No. 3D9A)</td>
<td>F. 50 microcuries</td>
</tr>
<tr>
<td>12.</td>
<td>Radium D+E</td>
<td>- Sealed Source (Minnesota Mining &amp; Manufacturing Co. Model No. 3D9B)</td>
<td>G. 30 microcuries</td>
</tr>
<tr>
<td>13.</td>
<td>Strontium 90</td>
<td>- Sealed Source (Minnesota Mining &amp; Manufacturing Co. Model No. 3D1J)</td>
<td>H. 5 microcuries</td>
</tr>
<tr>
<td>14.</td>
<td>Rhodium 106</td>
<td>- Sealed Source (Minnesota Mining &amp; Manufacturing Co. Model No. 3D9C)</td>
<td>I. 20 microcuries</td>
</tr>
</tbody>
</table>

(See page 3)
State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

6. Radioactive material (element and mass number)
   J. Frenchnium 147

7. Chemical and/or physical form
   J. Sealed Source (Minnesota Mining & Manufacturing Co.
   Model No. 3D2A)

8. Maximum quantity licensed may possess at any one time
   J. 50 microcuries

9. Authorized use
   A. To be used in a Central Scientific Company Model 27530 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 GMD Corporation Model 150 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. NK-4 for
      measurement of thickness of plating.

MAR 26 1966

FOR THE FLORIDA STATE BOARD OF HEALTH
Original Signed by
Thomas W. Harris

by
Division of Radiological and
Occupational Health
Jacksonville, Florida 32201
STATE OF FLORIDA
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

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 letter dated April 28, 1988, signed by R. F. Thompson, State of Florida
Radioactive Materials License No. 90 - 1 is hereby amended as follows:

TO CHANGE CONDITION 9 A, AUTHORIZED USE TO READ:

9. Authorized use

A. Development of and installation in rocket engines.

MAY 31 1988

DATE

FOR THE FLORIDA STATE BOARD OF HEALTH

Original Signed By:

Thomas W. Johnson
Division of Radiological and
Occupational Health
Jacksonville, Florida 32201
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)

K. Hydrogen 3

7. Chemical and/or physical form

K. Sealed Source (MicroTek
    Instruments, Inc. Model
    No. 739310)

8. Maximum quantity
    licensee may possess
    at any one time

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
    Prometium 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.

FOR THE FLORIDA STATE BOARD OF HEALTH
Original Signed by
Thomas W. Harris
Division of Radiological and
Occupational Health
Jacksonville, Florida 32201

Date: JUN 24 1966
State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

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).

FOR THE FLORIDA STATE BOARD OF HEALTH

Signed by

Thomas W. Harris
Division of Radiological Health
Jacksonville, Florida 32201

Date JUN 15 1968
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.

<table>
<thead>
<tr>
<th>Licensee</th>
<th>With reference to application dated December 22, 1969.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name</td>
<td>UNITED AIRCRAFT CORPORATION</td>
</tr>
<tr>
<td></td>
<td>Pratt &amp; Whitney Aircraft Division</td>
</tr>
<tr>
<td></td>
<td>Florida Research &amp; Development Center</td>
</tr>
<tr>
<td>2. Address</td>
<td>State Road 710 &amp; Pratt &amp; Whitney Road</td>
</tr>
<tr>
<td></td>
<td>West Palm Beach, Florida 33402</td>
</tr>
</tbody>
</table>

| 3. License number 90 - 1 is hereby amended in its entirety to read as follows: |
| 4. Expiration date January 31, 1972 |
| 5. Reference number |

<table>
<thead>
<tr>
<th>6. Radioactive material (element and mass number)</th>
<th>7. Chemical and/or physical form</th>
<th>8. Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td>(See page 2)</td>
<td>(See page 2)</td>
<td>(See page 2)</td>
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</tbody>
</table>

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<tr>
<th>9. Authorized use</th>
</tr>
</thead>
<tbody>
<tr>
<td>(See page 3)</td>
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</tbody>
</table>

**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, D shall be used by, or under the supervision of, L. M. Hamill.
- Item E shall be used by, or under the supervision of, J. P. Johnson.
- Items F through J shall be used by, or under the supervision of, Gordon G. Duncan.

(See page 3)
State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

6. Radioactive material (element and mass number)
   - A. Strontium 90
   - B. Krypton 85
   - C. Cobalt 60
   - D. Thorium 232
   - E. Lead 210
   - F. Thallium 204
   - G. Radium D & E

7. Chemical and/or physical form
   - A. One sealed source (Nuclear-Chicago Corp. Model RG-32)
   - B. 50 sealed sources (spark gap tubes)
     One source (American Atomic Association of Tucson Model SK 1090)
   - C. One sealed source (Tracerlab, Inc. Model R-31)
   - D. Thoriated Nickel (2% Thorium Oxide by volume)
   - 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)
   - F. One sealed source (Minnesota Mining & Manufacturing Co. Model No. 3D9A)
   - G. One sealed source, 300 microcuries (MM&M Co. Model 3D9B); one sealed source, 20 microcuries (Twin City Testing Corp. pencil probe type DD-3)

8. Maximum quantity licensee may possess at any one time
   - A. 10 millicuries
   - B. 158 microcuries
     (50 sources not to exceed 30 microcuries per tube; one source not to exceed 8 microcuries)
   - C. 1 millicurie
   - D. 200 pounds thorium oxide
   - E. 1.77 millicuries
   - F. 50 microcuries
   - G. 50 microcuries

(See page 3)
State of Florida
RADIOACTIVE MATERIALS LICENSE
AMENDMENT NO. 7
SUPPLEMENTARY SHEET

6. Radioactive material (element and mass number)

H. Strontium 99

I. Rhodium 106

J. Promethium 147

K. Hydrogen 3

7. Chemical and/or physical form

H. One sealed source (MCM Co., Model No. 3DL7)

I. One sealed source (MCM Co., Model 3D9C)

J. One sealed source (MCM Co., Model No. 3D2A)

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

8. Maximum quantity licenses may possess at any one time

H. 9 microcuries

I. 20 microcuries

J. 50 microcuries

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)
State of Florida
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

AMENDMENT NO. 7

CONDITIONS

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.

FOR THE FLORIDA STATE BOARD OF HEALTH

Original Signed by
Thomas W. Harris
Division of Radiological Health
Jacksonville, Florida 32201

Date FEB 8 1970
Pursuant to Chapter 290, Florida Statutes, and Chapters 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.

<table>
<thead>
<tr>
<th>Licensee</th>
<th>1. Name</th>
<th>UNITED AIRCRAFT CORPORATION Pratt &amp; Whitney Aircraft Division Florida Research &amp; Development Center</th>
<th>2. Address</th>
<th>State Road 710 &amp; Pratt &amp; Whitney Road West Palm Beach, Florida 33402</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Reference number</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Radioactive material (element and mass number)</th>
<th>7. Chemical and/or physical form</th>
<th>8. Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Strontium 90</td>
<td>A. One sealed source (Nuclear-Chicago Corp. Model RG-32)</td>
<td>A. 10 millicuries</td>
</tr>
<tr>
<td>B. Krypton 85</td>
<td>B. 50 sealed sources (spark gap tubes); one source (American Atomic Association of Tucson Model SK 1090)</td>
<td>B. 158 microcuries (50 sources not to exceed 30 microcuries per tube, one source not to exceed 8 microcuries)</td>
</tr>
<tr>
<td>C. Cobalt 60</td>
<td>C. One sealed source (Tracerlab, Inc. Model R-31)</td>
<td>C. 1 millicurie</td>
</tr>
<tr>
<td>D. Thorium 232</td>
<td>D. Thoriated Nickel (2% Thorium Oxide by volume)</td>
<td>D. 200 pounds thorium oxide</td>
</tr>
<tr>
<td>E. Lead 210 (Radium D)</td>
<td>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).</td>
<td>E. 1.77 millicuries</td>
</tr>
</tbody>
</table>

(See page 2)
<table>
<thead>
<tr>
<th>6. Radioactive material (element and mass number)</th>
<th>7. Chemical and/or physical form</th>
<th>8. Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F. Thallium 204</strong></td>
<td>F. Sealed sources; one sealed source, 50 microcuries (Minnesota Mining &amp; Manufacturing Company Model No. 3D9A), one sealed source, 50 microcuries (MM&amp;M Co. Serial No. F1043)</td>
<td>F. 100 microcuries</td>
</tr>
<tr>
<td><strong>G. Radium D &amp; E</strong></td>
<td>G. Sealed sources; one sealed source, 20 microcuries (MM&amp;M Co. Model 3D9B), one sealed source, 20 microcuries (Twin City Testing Corp. pencil probe type DD-3); one sealed source, 20 microcuries (MM&amp;M Co. Serial No. F224)</td>
<td>G. 60 microcuries</td>
</tr>
<tr>
<td><strong>H. Strontium 90</strong></td>
<td>H. Sealed sources; one sealed source, 5 microcuries (MM&amp;M Co. Model No. 3D1J); one sealed source, 5 microcuries (MM&amp;M Co. Serial No. F300)</td>
<td>H. 10 microcuries</td>
</tr>
<tr>
<td><strong>I. Rhodium 106</strong></td>
<td>I. One sealed source (MM&amp;M Co. Model 3D9C)</td>
<td>I. 30 microcuries</td>
</tr>
<tr>
<td><strong>J. Promethium 147</strong></td>
<td>J. Sealed sources; one sealed source, 600 microcuries (MM&amp;M Co. Model No. 3D2A); one sealed source, 600 microcuries (MM&amp;M Co. Serial No. F1282)</td>
<td>J. 1200 microcuries</td>
</tr>
<tr>
<td><strong>K. Hydrogen 3</strong></td>
<td>K. One sealed source (Micronet Instruments, Inc. Model No. 739310)</td>
<td>K. 130 microcuries</td>
</tr>
<tr>
<td><strong>L. Krypton 85</strong></td>
<td>L. One sealed source (American Atomics Corp. Model SK1075)</td>
<td>L. 200 microcuries</td>
</tr>
</tbody>
</table>

(See page 3)
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. RX4 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)
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.
With reference to memorandum dated April 28, 1970, signed by L. H. 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, 7, AND 8, D. TO READ:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Radioactive material (element and mass number)</td>
<td>7. Chemical and/or physical form</td>
</tr>
<tr>
<td>B. Krypton 85</td>
<td>B. 50 sealed sources (spark-gap tubes); one source (American Atomic Association of Tucson Model SK 1090)</td>
</tr>
<tr>
<td>D. Thorium 232</td>
<td>D. Thoriated nickel (2% thorium oxide by volume) and thoriated cobalt (2% thorium oxide by volume)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**8. Maximum quantity licensee may possess at any one time**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>B. 9.5 millicuries (50 sources not to exceed 30 microcuries per tube; one source not to exceed 8 milli-curies)</td>
</tr>
<tr>
<td>D. 200 pounds thorium oxide</td>
</tr>
</tbody>
</table>

**Date:** MAY 20 1970

**FOR THE DIVISION OF HEALTH**

**Original Signed by**

**Radiological and Occupational Health Section**

Jacksonville, Florida 32201
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)

Date: JUL 27 1970

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

Pursuant to Chapter 290, Florida Statutes, and Chapter 110J, 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.

<table>
<thead>
<tr>
<th>Licensee</th>
<th>Radioactive material</th>
<th>Chemical and/or physical form</th>
<th>Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITED AIRCRAFT CORPORATION</td>
<td>Strontium 90</td>
<td>One sealed source (Nuclear-Chicago Corp., Model RG-32)</td>
<td>A. 10 millicuries</td>
</tr>
<tr>
<td>Pratt &amp; Whitney Aircraft Division</td>
<td>Krypton 85</td>
<td>50 sealed sources (spark gap tubes); one source (American Atomic Association of Tucson Model 6K 1090)</td>
<td>B. 9.5 millicuries (50 sources not to exceed 30 microcuries per tube; one source not to exceed 8 millicuries)</td>
</tr>
<tr>
<td>State Road 710 &amp; Pratt &amp; Whitney Rd., West Palm Beach, Florida 33402</td>
<td>Cobalt 60</td>
<td>One sealed source (Fraserlab, Inc. Model B-41)</td>
<td>C. 1 millicurie</td>
</tr>
<tr>
<td></td>
<td>Thorium 232</td>
<td>Thoriated nickel (2% thorium oxide by volume) and thoriated cobalt (2% thorium oxide by volume)</td>
<td>D. 200 pounds thorium oxide</td>
</tr>
<tr>
<td></td>
<td>Lead 210 (Radium D)</td>
<td>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)</td>
<td>E. 1.77 millicuries</td>
</tr>
</tbody>
</table>

(See page 2)
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Radioactive material (element and mass number)</td>
</tr>
<tr>
<td>7.</td>
<td>Chemical and/or physical form</td>
</tr>
<tr>
<td>8.</td>
<td>Maximum quantity licensee may possess at any one time</td>
</tr>
<tr>
<td>9.</td>
<td>License Number 90-1</td>
</tr>
<tr>
<td>11.</td>
<td>Amendment No. 11</td>
</tr>
<tr>
<td>F.</td>
<td>Thallium 204</td>
</tr>
<tr>
<td>G.</td>
<td>Radium D &amp; E</td>
</tr>
<tr>
<td>H.</td>
<td>Strontium 90</td>
</tr>
<tr>
<td>I.</td>
<td>Rhodium 106</td>
</tr>
<tr>
<td>J.</td>
<td>Promethium 147</td>
</tr>
<tr>
<td>K.</td>
<td>Hydrogen 3</td>
</tr>
<tr>
<td>L.</td>
<td>Krypton 85</td>
</tr>
<tr>
<td></td>
<td>(See page 3)</td>
</tr>
</tbody>
</table>

- **F.** Thallium 204
  - Sealed sources; one sealed source, 50 microcuries (Minnesota Mining & Manufacturing Company Model No. 3D9A), one sealed source, 50 microcuries (MM&H Co. Serial No. F1043)

- **G.** Radium D & E
  - Sealed sources; one sealed source, 20 microcuries (MM&H Co. Model 3D9B), one sealed source, 20 microcuries (Twin City Testing Corp. pencil probe type DD-3), one sealed source, 20 microcuries (MM&H Co. Serial No. F224)

- **H.** Strontium 90
  - Sealed sources; one sealed source, 5 microcuries (MM&H Co. Model No. 3DL1), one sealed source, 5 microcuries (MM&H Co. Serial No. F500)

- **I.** Rhodium 106
  - One sealed source (MM&H Co. Model 3D9C)

- **J.** Promethium 147
  - Sealed sources; one sealed source, 600 microcuries (MM&H Co. Model No. 3D2A), one sealed source, 600 microcuries (MM&H Co. Serial No. F1282)

- **K.** Hydrogen 3
  - One sealed source (Microtek Instruments, Inc. Model No. 739310)

- **L.** Krypton 85
  - One sealed source (American Atomics Corp. Model SK1075)

- **F.** 100 microcuries
- **G.** 60 microcuries
- **H.** 10 microcuries
- **I.** 30 microcuries
- **J.** 1200 microcuries
- **K.** 130 microcuries
- **L.** 200 microcuries
6. Radioactive material (element and mass number)

7. Chemical and/or physical form

8. Maximum quantity licenses may possess at any one time

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M. Promethium 147</td>
<td>M. Two sealed sources, 10 microcuries each (Unit Process Assemblies, Inc. Model MM-2R, Serial No. 5399); one sealed source, 10 microcuries (Unit Process Assemblies, Inc. Model MM-3, Serial No. 5547)</td>
</tr>
<tr>
<td>N. Strontium 90</td>
<td>N. Sealed source (Unit Process Assemblies, Inc. Model MM-3, Serial No. 9949)</td>
</tr>
<tr>
<td>O. Radium D</td>
<td>O. Sealed source (Unit Process Assemblies, Inc. Model MM-3, Serial No. 8766)</td>
</tr>
<tr>
<td>P. Thallium 204</td>
<td>P. Sealed source (Unit Process Assemblies, Inc. Model MM-3, Serial No. 7352)</td>
</tr>
</tbody>
</table>

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 Corporation Model 130 Airfoil Wall Thickness Gauge for measurement of thickness of material.
F. through J. To be used with Twin City Testing Corporation Data-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-Dent 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 1703-1, Florida Administrative Code.

(See page 4)
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.

Date DEC 9 0 1970

Original Signed by
Thomas W. Harris
Radiological and Occupational Health Section
Jacksonville, Florida 32201
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)
7. Chemical and/or physical form
8. Maximum quantity licensee may possess at any one time
Q. Promethium 147
Q. Sealed source (Unit Process Assemblies, Inc. Model HH-3X, Serial No. 5592)
Q. 50 microcuries

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

Date OCT 22 1971

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris
by Radiological and Occupational Health Section
Jacksonville, Florida 32201
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 December 20, 1971, signed by William R. Campbell, State of Florida Radioactive Materials License No. 90 – 1 is hereby amended as follows:

The expiration date (Item 4) is extended from January 31, 1972 to January 31, 1974.

The symbol below the license number is changed from (A72) to (A74).

Date: DEC 22 1971

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris
by Radiological and Occupational Health Section
Jacksonville, Florida 32201
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  
   F. Sealed source (Minnesota Mining & Manufacturing Company Model No. 3D9A)

8. Maximum quantity licensee may possess at any one time
   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.

Date: AUG 2 3 1972

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

Date: MAR 15 1973

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

<table>
<thead>
<tr>
<th>Licensee</th>
<th>Radioactive material (element and mass number)</th>
<th>Chemical and/or physical form</th>
<th>Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Am. 20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 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                                       |                                               |                              |                                                     |
| 3. License number 90 - 1 is hereby amended in its entirety to read as follows: |
| 4. Expiration date January 31, 1976                                     |                                               |                              |                                                     |
| 5. Reference number                                                     |                                               |                              |                                                     |

A. Strontium 90

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

B. Krypton 85

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

C. Cobalt 60

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

D. Thorium 232

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

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)

(See page 2)
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. One sealed source, 50 microcuries (Minnesota Mining & Manufacturing Company Model No. 3D9 A).
   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. F-279)
      One sealed source, 20 microcuries (Twin City Testing Corp. DD-3)
   H. Sealed sources
      One sealed source, 5 microcuries (MM&M Co. Model No. 3D1J)
      One sealed source, 5 microcuries (MM&M Co. Serial No. F-300)
   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 Atomics Corp. Model SK1075)

(See page 3)

8. Maximum quantity licensee may possess at any one time
   F. 50 microcuries
   G. 80 microcuries
   H. 10 microcuries
   I. 30 microcuries
   J. 1200 microcuries
   K. 130 microcuries
   L. 200 microcuries

Best Copy Available
6. Radioactive material (element and mass number)

<table>
<thead>
<tr>
<th>M. Promethium 147</th>
<th>N. Strontium 90</th>
<th>O. Radium D</th>
<th>P. Thallium 204</th>
<th>Q. Promethium 147</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 microcuries each</td>
<td>10 microcuries</td>
<td>10 microcuries</td>
<td>50 microcuries</td>
<td>50 microcuries</td>
</tr>
</tbody>
</table>

7. Chemical and/or physical form

- Two sealed sources (Unit Process Assemblies, Inc., Model HH-2B; Serial No. 5399)
- Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial No. 9949)
- Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial No. 8766)
- Sealed source (Unit Process Assemblies, Inc., Model HH-3X, Serial No. 5592)

8. Maximum quantity licensee may possess at any one time

- 200 microcuries

9. Authorized use

- A. Development of and installation in rocket engines (**deleted by Am. #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)
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 shall be used by, or under the supervision of, E. P. Granberry, Jr.

Items 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)
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.

Date: JAN 15 1974

FOR THE DIVISION OF HEALTH

Original Signed By

Thomas W. Harris

Radiological and Occupational Health Section
Jacksonville, Florida 32201
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 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:

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

9. Authorized use

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

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:

- Items A, B, C, K, L, and R shall be used by, or under the supervision of, E. P. Cranberry, 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 N. Bell.

Date: AUG 7 - 1974

FOR THE DIVISION OF HEALTH
Original Signed by
Thomas W. Harris
Radiological and Occupational Health Section
Jacksonville, Florida 32201
UNIVERSITY 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. F. Cranberry, Jr.
Item D shall be used by, or under the supervision of, Arthur R. Cox.
Item E through J and K through Q shall be used by, or under the supervision of, Rax H. Bell.

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

Original Signed by:

B. C. Warren

Radiological and Occupational Health Section
Jacksonville, Florida 32201
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.
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.

JUN 6 - 1975

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

Original Signed By:
B. C. Warren
Radiological and Occupational Health Section
Jacksonville, Florida 32201
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. Anschrift, and latter dated December 12, 1975, signed by William R. Campbell, 3. License number 90-1 is hereby amended in its entirety to read as follows:

<table>
<thead>
<tr>
<th>Licensee</th>
<th>1. Name</th>
<th>2. Address</th>
<th>3. License number</th>
<th>4. Expiration date</th>
<th>5. Reference number</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITED TECHNOLOGIES CORPORATION</td>
<td>Pratt &amp; Whitney Aircraft Division</td>
<td>West Palm Beach, Florida 33402</td>
<td>90-1</td>
<td>January 31, 1981</td>
<td></td>
</tr>
</tbody>
</table>

6. Radioactive material (element and mass number)

| 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 |

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 Cap Tubes); two sources (American Atomic Association of Tucson Model SK 1090)

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

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)

8. Maximum quantity licensee may possess at any one time

A. 200 pounds Thorium oxide

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. 1 millicurie

D. 270 microcuries

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RADIOACTIVE MATERIAL 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

7. Chemical and/or physical form

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

F. 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. F-279)
One sealed source, 20 microcuries (Twin City Testing Corp. DD-3)

G. Sealed sources
One sealed source, 5 microcuries (MM&M Co. Model No. 3D1J)
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 microcuries (MM&M Co. Model No. 3D2A)
One sealed source, 600 microcuries (MM&M Co. Serial No. FL282)

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
6. Radioactive material
   (element and mass number)
K. Promethium 147
L. Strontium 90
M. Radium 226
N. Thallium 204
O. Hydrogen 3
P. Hydrogen 3
Q. Nickel 63

7. Chemical and/or physical form
K. Two sealed sources
   50 microcuries each (Unit Process
   Assemblies, Inc. Model HH-2B, Serial No. 5399)
L. Sealed source (Unit Process
   Assemblies, Inc. Model HH-3, Serial No. 9949)
M. Sealed source (Unit Process
   Assemblies, Inc. Model HH-3, Serial No. 8766)
N. Sealed source (Unit Process
   Assemblies, Inc. Model HH-3, Serial No. 7352)
O. One sealed source (Microtek
   Instruments, Inc. Model No. 739310)

8. Maximum quantity
   licensee may possess
   at any one time
K. 200 microcuries
L. 10 microcuries
M. 10 microcuries
N. 50 microcuries
O. 130 microcuries

9. Authorized use

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.
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.

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:

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.
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 micro-
curies 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.

E. 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.
S. Authorized use.

T. To be used in Varian Trace Gas Analyzer, Model No. 2731.

U. To be used with a Micro-Derm KD-3 unit in inspection work.

TO DELETE ITEMS 6., 7., 9., and 9.; SUBITEMS J., K., L., M., and N.

TO CHANGE CONDITION 12. TO READ:

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, 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, I, G, H, I, S, and U shall be used by, or under the supervision of Rex M. Roll.
STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

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, S 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, 1976, State of Florida Radioactive Materials License No. 90-1 is hereby amended as follows:

NO.: 20-1

6. Radioactive material (element and mass number) 7. Chemical and/or physical form 8. Maximum quantity licensed at any one time

A. Krypton 85 R. Jet engine vanes and blades R. 25 millinjper
B. Promethium 147 S. Sealed source (Unit Process S. 50 microcurie
Assemblies, Inc., Macal NH-3, Serial No. 25656)
D. Strontium 90 U. Sealed source (Unit Process U. 10 microcurie
Assemblies, Inc. Model HD-3, Serial No. 29926)

5. Authorized use.

R. Surface detection of engine parts.
S. To be used with a Micro-Dorm MD-3 unit in inspection work.

(See Page 2)
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:**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Radioactive material (element and mass number)</td>
<td></td>
</tr>
<tr>
<td>W.</td>
<td>Promethium 147</td>
<td></td>
</tr>
<tr>
<td>X.</td>
<td>Thallium 204</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Chemical and/or physical form</td>
<td></td>
</tr>
<tr>
<td>W.</td>
<td>Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial No. 45468)</td>
<td>W. 75 microcuries</td>
</tr>
<tr>
<td>X.</td>
<td>Sealed source (Unit Process Assemblies, Inc., Model HH-3, Serial No. 47097)</td>
<td>X. 90 microcuries</td>
</tr>
</tbody>
</table>


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

**TO CHANGE CONDITION 12 TO READ:**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

(See page 2)
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.
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

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. 90-7 is hereby amended as follows:

<table>
<thead>
<tr>
<th>TO ADD:</th>
<th>7. Chemical and/or physical form</th>
<th>8. Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Radioactive material (element and mass number)</td>
<td>Y. Sealed source (Kevex Analytical Instrument Division Model 0102 Serial No. 3415)</td>
<td>Y. 20 millicuries</td>
</tr>
<tr>
<td>Ca(109)</td>
<td>Y. Sealed source (Unit Process Assemblies, Inc. Model HH-3 Serial No. 49052)</td>
<td>Z. 25 microcuries</td>
</tr>
<tr>
<td>Sr(90)</td>
<td>AA. Sealed source (Unit Process Assemblies, Inc. Model HH-3 Serial No. 47625)</td>
<td>AA. 100 microcuries</td>
</tr>
<tr>
<td>Tl(204)</td>
<td>AB. Sealed source (Unit Process Assemblies, Inc. Model HH-3 Serial No. 25802)</td>
<td>AB. 75 microcuries</td>
</tr>
</tbody>
</table>

(See page 2)
6. Radioactive material (element and mass number)
   AC. Radium D

7. Chemical and/or
   AC. Sealed source
      (Unit Process Assemblies, Inc.
      Model HH-3
      Serial No. 28775)

8. Maximum quantity licensee may possess at any one time
   AC. 10 microcuries

   Y. To be used with a Kevex Analytical Instrument Model 6600 for inspection work.
   Z. AA, AB, AC. To be used with a Micródeim MD-3 unit in inspection work.

TO CHANGE CONDITION 12 C TO READ:

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.

Best Copy Available
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

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

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 7)

CC. Radium D
   CC. Sealed sources (Unit Process Assemblies, Inc. Model HH 3)

TO CHANGE CONDITION 12.C. TO READ:

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 H. Bell.

Date May 16, 1979

Ulray 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

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

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

6. Radioactive material (element and mass number)

   BB. Promethium 147
   CC. Promethium 147
   DD. Radium D
   EE. Radium D

7. Chemical and/or physical form

   BB. Sealed source (Unit Process Assemblies Inc., Model HH-3, Serial 25802)
   CC. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial 45745)
   DD. Sealed source (Unit Process Assemblies, Inc. Model HH 3, Serial 28775)
   EE. Sealed source (Unit Process Assemblies, Inc. Model HH 3, Serial 28764)

8. Maximum quantity licensee may possess at any one time

   BB. One source not to exceed 75 microcuries
   CC. One source not to exceed 75 microcuries
   DD. One sources not to exceed 10 microcuries
   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:

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 D, 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

Ulray Clark
Administrator
Radiological Health Services

Original Signed by
by Floyd Hoch

Radiological Health Services
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:

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

Date August 15, 1979

Ray Clark
Administrator
Radiological Health Services
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.
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.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name: UNITED TECHNOLOGIES CORPORATION</td>
<td></td>
</tr>
<tr>
<td>2. Address: Government Products Division</td>
<td></td>
</tr>
<tr>
<td>Post Office Box 2691</td>
<td></td>
</tr>
<tr>
<td>State Road 710 &amp; Pratt &amp; Whitney Road</td>
<td></td>
</tr>
<tr>
<td>West Palm Beach, Florida 33402</td>
<td></td>
</tr>
<tr>
<td>3. License number 20-1 (806) to hereby change in its entirety to read as follows:</td>
<td></td>
</tr>
<tr>
<td>4. Expiration date: January 31, 1986</td>
<td></td>
</tr>
<tr>
<td>5. Reference number: CATEGORY: 3E</td>
<td></td>
</tr>
<tr>
<td>6. Radioactive material (element and mass number)</td>
<td></td>
</tr>
<tr>
<td>A. Thorium 232</td>
<td></td>
</tr>
<tr>
<td>B. Cesium 137</td>
<td></td>
</tr>
<tr>
<td>C. Cobalt 60</td>
<td></td>
</tr>
<tr>
<td>(and Iron 2)</td>
<td></td>
</tr>
<tr>
<td>7. Chemical and/or physical form</td>
<td></td>
</tr>
<tr>
<td>A. Thoriated Nickel (227)</td>
<td></td>
</tr>
<tr>
<td>B. 50 sealed sources (Sr-90) and/or physical form</td>
<td></td>
</tr>
<tr>
<td>C. 1 million curie</td>
<td></td>
</tr>
<tr>
<td>8. Maximum quantity licensee may possess at any one time</td>
<td></td>
</tr>
<tr>
<td>A. 200 pounds Thorium oxide</td>
<td></td>
</tr>
<tr>
<td>B. 10.7 milllicuries (50)</td>
<td></td>
</tr>
<tr>
<td>C. 1 million curie</td>
<td></td>
</tr>
</tbody>
</table>
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

7. Chemical and/or physical form

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

9. One sealed source, 50 microcuries (Minnesota
   Mining & Manufacturing
   Company Model No. 309 A)

10. Scattered sources
    One sealed source, 20 microcuries (KEND Co.
       Model 300M)
    One sealed source, 20 microcuries (Rud City
       Nuclear Corp. model 20
       probe type CD-3) pin
    One sealed source, 20 microcuries (KEND Co.
       Model No. 2-277)
    One scattered source, 20 microcuries (Rud City
       Nuclear Corp. AS-41)

11. Scattered source
    One scattered source, 5 microcuries (KEND Co.
       Model No. 3ID1)
    One scattered source, 5 microcuries (KEND Co.
       Model No. P-300)
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
1317 Winwood Boulevard
Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 4 of 4 Pages

License Number 98-1 (ASG)
Almabond Co. 29 (UK)

6. Maximum quantity
1 license any possession
at any one time

10 microcuries

7. Chemical and/or physical form

10 microcuries

8. Sealed container (Units
Procom Analytical
Division - Tyco Metal/
Drawing No: 6000720)

500 milli microcuries

9. Sealed container, unassured
you (General Physics
Division - Tyco Metal/
Drawing No: 6000720)

75 microcuries

10. Sealed container (Units
Procom Analytical
Division - Tyco Metal/
Drawing No: 6000720)

90 microcuries

11. Sealed container (Units
Procom Analytical
Division - Tyco Metal/
Drawing No: 6000720)

20 milli microcuries

12. Sealed container (Units
Procom Analytical
Division - Tyco Metal/
Drawing No: 6000720)

20 microcuries

13. Sealed container (Units
Procom Analytical
Division - Tyco Metal/
Drawing No: 6000720)

25 microcuries

14. Canassume use to
130 microcuries

15. Canassume use to
130 microcuries
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIOLOGICAL HEALTH SERVICES
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Authorized Uses:
N, D, T, B, U, V, W, X, Y, and Z. To be used with a Micro-Dent D-3 unit for inspection work.

2. To be used in research applications on electroencephalograph model 600 porous module.
3. To be used in various tissue gantry analyzers, model no. 50-273129-00.
4. To be used in Delphi Mass Spectrometer gantry electromagnetograph model no. 3920.

Surface detection of gamma parts.
5. To be used in various tissue gantry analyzers, model no. 2731.
6. To be used in all gamma indicator on military jet engine.

7. To be used with laser analytical instrument, model 6600, for inspection work.

Number of Licences: 25 Licensees: 15

Conditions:
10. Unless otherwise specified, the authorized place of use is the licensee's immediate
   center in item 2 above.

11. The licensee shall comply with the provisions of "Rules, Department of Health and
    Rehabilitative Services, Control of Radiation Emissions", Chapters 10B-56, Florida
    Administrative Code.

12. Licensee shall keep on file, or under the supervision of, the documentation of the device, as
    set forth in § 10B-36, F.A.C.

13. Source code containing nuclear material shall not be opened or the source removed from
    the source code by the licensee.

14. Source code containing Hydrogen 3 code shall only be used in conjunction with a
    properly operating temperature control mechanism which prevents field excursions from
    exceeding 25 degrees centigrade.

(See Page 7)
15. Detector Collin containing Isotop 65 foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperature from exceeding 390 degree centigrade.

16. a. Each sealed source required from another person and containing radionuclide 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 manufacturer 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. Survey of sealed sources and sealed source storage containers shall be made at intervals not to exceed six months to ensure the integrity of the containment. The test samples shall be taken from the sealed source or from the contacts 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 microcurie 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 microcurie or more of radioactive contamination, the licensee shall immediately withdraw the sealed source or sealed source storage container from use and shall cause it to be disassembled and required to decommission and is 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 Service, Department of Health and Rehabilitative Services, 1339 Winewood Boulevard, Tallahassee, Florida 32304, describing the equipment involved, the cost involved, and the corrective action taken.

d. Tests for leakage and/or contamination shall be performed by the manufacturer. The licensee shall use only approved test kits, or by persons specifically authorized by the high-level radioactive contamination of the apparatus State to perform such tests.

17. a. Except as specifically provided otherwise by this license, the licensee shall not and use licensed material described in Item 6, 7, and 8 of this license in accord with statements, representations, and procedures contained in the license or in accord with certificates issued to the licensee since April 6, 1964, all signed by W. S. Turner.

(See Page 9)
D. "Florida Central Code of Regulation Florida" regulation, Chapter 100-30, Fls. 1004 Administer code shall protect the licensee's statement in applications on letter, unless the statute are more restrictive than the regulations.

[Signature]

Ulray Clark
Administrator
Radiological Health Services

Original Signed 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

UNITED TECHNOLOGIES CORPORATION
PLATT & WHITNEY AIRCRAFT GROUP
Government Products Division
Post Office Box 2691
State Road 710 & Pratt & Whitney Road
Mont 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

T. Source source (Kovex Analytical
Instrumcat Model 0102)

3. Maximum quantity license may possess at any one time

T. 40 millicuries. No single source to exceed 20 millicuries.

Best Copy Available

Date: February 15, 1982

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

Original Signed By: - -
Radiological Health Services
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
1317 Winewood Boulevard
Tallahassee, Florida 32301
RADIATION CONTROL
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

UNIVERS 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 CHARGE 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.

Date October 11, 1983

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

by William E.
Radiation Control
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:

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)
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.
State of Florida
Department of Health and Rehabilitative Services
1317 Winewood Boulevard
Tallahassee, Florida 32301
Radiation Control
Radioactive Materials License
Supplementary Sheet

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

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)

BB. Strontium 90

7. Chemical and/or physical form

BB. Sealed source (UPA Technology, Inc., model HH-3, Serial number 49714)

8. Maximum quantity licensee may possess at any one time

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

Lyle E. Jarrett, Ph.D.
Director
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

UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
State Road 710 and Pratt & Whitney Road
P. O. Box 2591
West Palm Beach, FL 33402

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:

TC ADD:

5. Nucleractive material
   (element and mass number)
   _______  7. Chemical and/or physical
   _______  8. May possess at any one
   _______  _______ form

    7. Nickel 63     CC. Sealed source (U.S.
                    Radium LAB 508-3,
                    Amersham NBC, or New
                    England Nuclear
                    HSR-002 or NER-004)

    0. Hydrogen 3    DD. Titanium Tritide Foil
                    (U.S. Radium Corp.
                    LAB-508-3 Foil)

    11. Nickel 66
                    Used in Varian Model Vista 66, 6000 Gas Chromatograph for analyzing PCB's.


(____ page 3)
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
1317 Winewood Boulevard
Tallahassee, Florida 32301

RADIATION CONTROL
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

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

3. Radioactive material (alcronet and mass number) 7. Chemical and/or physical form 3. Maximum quantity licensee may possess at any one time

3. Krypton 85 7. 50 sealed sources (Spark Cap Tubes) One source (American Atomic Association of Tucson Model SK1090) 3. 50 sources not to exceed 30 microcuries per tube; one source not to exceed 200 microcuries

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

TO ADD CONDITION 19 TO READ:

19. At annual intervals, an inventory of all sealed and placed 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 January 3, 1986

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

Best Copy Available

HRS Form 177, May 83 (Replaces Aug 82 edition which may be used)
STATE OF FLORIDA  
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES  
OFFICE OF RADIATION CONTROL  

RADIOACTIVE MATERIALS LICENSE  

Pursuant to Chapter 404, Florida Statutes, and Chapter 100-91, 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.

<table>
<thead>
<tr>
<th>Licensee</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Name:</strong></td>
<td>UNITED TECHNOLOGIES CORPORATION Pratt &amp; Whitney Aircraft Group</td>
<td></td>
</tr>
<tr>
<td><strong>2. Address:</strong></td>
<td>Government Products Division Post Office Box 2691 State Road 710 &amp; Pratt &amp; Whitney Road West Palm Beach, FL 33402</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>**6. Radioactive material (element and mass number)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Thorium 232</td>
<td>A. Thoriated nickel (250 microcuries)</td>
<td>A. 200 pounds thorium oxide.</td>
</tr>
<tr>
<td></td>
<td>Thorium oxide by volume</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thoriated cobalt (250 microcuries)</td>
<td>Thorium oxide by volume.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Promethium 147</td>
<td>C. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 65036)</td>
<td>C. 1 source not to exceed 50 microcuries.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Promethium 147</td>
<td>D. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 45468)</td>
<td>D. 1 source not to exceed 75 microcuries.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Thalium 204</td>
<td>E. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 47097)</td>
<td>E. 1 source not to exceed 90 microcuries.</td>
</tr>
</tbody>
</table>

(See Page 2)
<table>
<thead>
<tr>
<th>Chemical and/or physical form</th>
<th>Radioactive material (element and mass number)</th>
<th>Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. Promethium 147</td>
<td>F. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 45745)</td>
<td>F. 1 source not to exceed 75 microcuries.</td>
</tr>
<tr>
<td>G. Lead 210</td>
<td>G. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 88764)</td>
<td>G. 1 source not to exceed 90 microcuries.</td>
</tr>
<tr>
<td>H. Strontium 90</td>
<td>H. Sealed source (Unit Process Assemblies, Inc. Model HH-3, Serial Number 49714)</td>
<td>H. 1 source not to exceed 24 microcuries.</td>
</tr>
<tr>
<td>I. Cadmium 109</td>
<td>I. Sealed source (Newex Analytical Instrument Division, Model 0102)</td>
<td>I. 2 sources; not to exceed 20 microcuries each.</td>
</tr>
<tr>
<td>J. Cesium 137</td>
<td>J. Sealed source (Isotope Products Laboratory, Model 229-8-1)</td>
<td>J. 1 source not to exceed 10 microcuries.</td>
</tr>
<tr>
<td>K. Nickel 63</td>
<td>K. Sealed sources (U. S. Radium LAB 508-3, Amersham, VEC or New England Nuclear, NER-002 or NER-006)</td>
<td>K. 4 sources; not to exceed 8 microcuries each.</td>
</tr>
<tr>
<td>L. Hydrogen 3</td>
<td>L. Titanium Brittle Foil (U. S. Radium Corp. LAB 508-3 Foil)</td>
<td>L. 2 sources; not to exceed 1,000 microcuries each.</td>
</tr>
</tbody>
</table>

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)
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 & N. #59, 0, #66

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. A. Licensed material in Items 5, 7, 9, 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 5, 7, 9, and 9, Subitem A shall be used by or under the supervision of Arthur H. Con.

C. Licensed material in Items 6, 7, 9, and 9, Subitems D, I and H shall be used by Alson D. Owen.

D. Licensed material in Items 6, 7, 9, and 9, Subitem X 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)
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.

16. 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 in 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 surface 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)
18. 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 Whewel Boulevard, Tallahassee, Florida 32399-0700, describing the equipment involved, the test method used, the results and the corrective action taken.

D. The test sample (seal) 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 10B-91, Florida Administrative Code.

(See Page 6)
STATE OF FLORIDA  
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES  
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE  
SUPPLEMENTARY SHEET

Licensee: 

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

Date: May 13, 1987

Best Copy Available

For the Office of Radiation Control

Paul L. Wooten, Jr.  
Public Health Physicist

HRS Form 177, Jan 87 (Replaces previous editions)

License Number: 50-1  
Effective Date: 9/3/37  
(351) (901)

22. A. Except as specifically provided on license by this license, the licensee shall prepare and use licensed material described in Items 6, 7, 8, and 9 of this license in accordance with regulations, representations, and procedures contained in the licensee's renewal application dated December 17, 1985, signed by R. T. Grassbury, Jr., Manager, Industrial Physics & Safety Engineering, and correspondence noted:

October 16, 1985; and
January 9, 1986, both signed by R. T. Grassbury, Jr., Manager, Industrial Physics & Safety Engineering; and

A. The license shall specify all applicable requirements of the "Florida Control of Radioactive Materials" (F.A.C. 121-45.001, et seq., Florida Administrative Code). The regulations will specify the licensee's responsibilities in application of these regulations, and no other responsibilities are more consistent with the regulations.

23. #99
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

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 A and N TO READ:

6. Radioactive material
(element and mass number)

N. Nickel 63
N. Cesium 137

7. Chemical and/or physical form

M. foil (New England Nuclear
Model NER-004)
N. sealed sources (Omnet Corporation
Model A-2100 or A-2102)

8. Maximum quantity licensee may possess at any one time

M. 1 source not to exceed 10 millicuries.
N. 1 source not to exceed 80 microcuries.

9. Authorized Use

N. To be used in a Hewlett-Packard Traceport Company Model 902 gas chromatograph for analyzing hydraulic fluid.
N. To be used in an Omnet Corporation Model 8R-A source holder for use in level cut series 1000 powder levels.

(See Page 2)
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 A. Cox.

C. Licensed material in Items 6, 7, 8 and 9, Subitems D, I and H shall be used by Alcon D. Owen.

D. Licensed material in Items 6, 7, 8 and 9, Subitem K shall be used by James M. Spaulding, III.

E. Licensed material in Items 6, 7, 8 and 9, Subitem Y and M shall be used by or under the supervision of Carse S. Rank.

F. Licensed material in Items 6, 7, 8 and 9, Subitem A shall be used by or under the supervision of James J. Kerrick.

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 150° celsius for the gas chromatograph named in Items 6, 7, 8 and 9, Subitem I, and 400° celsius for the gas chromatograph named in Items 6, 7, 8 and 9, Subitem K.

19. 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.
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 H, 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 surface 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 North 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 (swab) 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.

Date: February 5, 1988

For the Office of Radiation Control

[Signature]
Paul E. Vause, Jr.
Public Health Physicist
UNITED TECHNOLOGIES CORPORATION
Pratt & Whitney Aircraft Group
Government Products Division
P. O. Box 2691
State Road 710 & Pratt 7 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, Subitem 6 TO READ:

6. Radioactive material (element and mass number)

8. Maximum quantity licensee may possess at any one time

0. Radioactive material distributed to a general licensee per 10CFR 71.119, (1) and (4), Para 39

6. No single source to exceed that quantity authorized for the General Licensed Device

9. Authorized Use

0. To be used in device(s) as described in Item 6.

(See page 2)
TO VDO CONDITION 23 TO READ:

CONDITIONS

23. This condition pertains to General licensed device(s) described in Items 5, 7, and 8, subitem 0:

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 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 or the direction of 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 once six months and maintain a record showing name of material, type of use, and method of disposal.

D. Required tests for the radiation containment or sealed sources containing radioactive material shall be performed at a prescribed 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

[Signature]

Randy A. Aldridge
Public Health Physicist

Date March 14, 1988
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE

Pursuant to Chapter 404, Florida Statutes, and Chapter 100-91, 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 License 

3. License Number: 90-1 is hereby amended in its entirety to read as follows:

| 1. Name: UNITED TECHNOLOGIES CORPORATION  
Pratt & Whitney Aircraft Group  
Government Products Division |
|---|
| 2. Address: Post Office Box 2691  
State Road 710 & Pratt & Whitney Rd.  
West Palm Beach, Fl. 33402 |
| 3. Expiration date: January 31, 1991 |
| 4. Category: 3K |
| 5. Radioactive material (element and mass number) | Chemical and/or physical form | 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 (New England Nuclear Model AN-109) | C. 2 sources; not to exceed 20 millicuries each. |
| D. Nickel 63 | D. Sealed sources (Ohmart Corporation Models A-2100 or A-2102) | 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. |

HRS Form 176, Oct 87 (Replaces Jan 87 edition which may be used)
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 Keve 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 50-A source holder as a component of a level detector device.
F. To be used in devices approved by the recipient under General License provisions as described below.

10. The authorized place of use shall be an licensed facility located at the address of Item 7 above.

11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to Section 775.082, Florida Statutes. Also, violations may warrant an administrative fine of up to $1,000.00 per violation pursuant to Section 381.157, Florida Statutes.

12. A. Licensed material in Items 6, 7, 8 and 9, Subitem A shall be used by or under the supervision of Marc E. Rippen.
B. Licensed material in Items 6, 7, 8 and 9, Subitem B shall be used by or under the supervision of Marc E. Rippen.
C. Licensed material in Items 6, 7, 8 and 9, Subitem C shall be used by or under the supervision of Robert E. Hendricks.
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 such approval will be kept on file for inspection.
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 source removed from the detector cell by the licensee.

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 110 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 inspected 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 (3) months. In the absence of leakage from a transiently indicating that a test has been made within thirty days prior to the transfer, a sealed source containing a radioactive period shall not be put into the hands of the licensee.

(2) Notwithstanding the periodic test required by this condition, any licensee shall be excused from such leak tests when the source contains less than one curie of beta and/or gamma emitting material or less than one curie of alpha emitting material.

B. The test shall be capable of detecting the presence of 0.009 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)
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 (sample) 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 described in Item 9, Subitem A.

A. Sealed source containing radioactive material authorized for distribution after General License shall not be opened or removed from their sealed holder by the licensee.

B. Installation, safeguard, maintenance, repair, removal from service and ultimate disposal of devices containing radioactive material are to be performed and disposal of sealed sources containing radioactive material shall be performed only by persons specifically authorized by the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing 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)
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 (904) 297-2939 or writing the Office of Radiation Control, Department of Health and Rehabilitative Services, Post Office Box 1911, Tallahassee, Florida 32302.

21. 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 or allowed by specific law and/or his license pursuant to the regulations of the Office of Control of Radiation

Hazard Regulations, Chapter 725, Florida Administrative Code.

(See Page 6)
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 90-1
AMENDMENT NO. 40
(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, represen-
tations 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. Dmochowski, Vice President Human
Resources; and
May 9, 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.

Date July 19, 1988

[signature]
Randy R. Aldridge
Public Health Physicist

HRS Form 177, Jan 87 (Replaces previous editions)
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:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Radioactive material (element and mass number)</td>
</tr>
<tr>
<td>7.</td>
<td>Chemical and/or physical form</td>
</tr>
<tr>
<td>8.</td>
<td>Maximum quantity licensee may possess at any one time</td>
</tr>
<tr>
<td>G.</td>
<td>Cobalt 56</td>
</tr>
<tr>
<td>G.</td>
<td>Impregnated into a bearing surface</td>
</tr>
<tr>
<td>G.</td>
<td>10 impregnated, not to exceed 10 microcuries per bearing.</td>
</tr>
<tr>
<td>H.</td>
<td>Hydrogen 3</td>
</tr>
<tr>
<td>H.</td>
<td>Titanium tritide foil (Safety Light Corp. Model LAB 508-3)</td>
</tr>
<tr>
<td>H.</td>
<td>4 sources; not to exceed 150 milli-curies each.</td>
</tr>
</tbody>
</table>

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)
TO CHANGE CONDITION 12 TO READ:

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. B. 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:

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

Date November 28, 1988
Paul E. Vause, Jr.
Public Health Physicist

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Radioactive material</td>
</tr>
<tr>
<td>7.</td>
<td>Chemical and/or physical form</td>
</tr>
<tr>
<td>8.</td>
<td>Maximum quantity licensee may possess at any one time</td>
</tr>
<tr>
<td>I.</td>
<td>Manganese 54</td>
</tr>
<tr>
<td>J.</td>
<td>Cobalt 57</td>
</tr>
<tr>
<td>K.</td>
<td>Cobalt 58</td>
</tr>
<tr>
<td>I.</td>
<td>Impregnated into a bearing surface</td>
</tr>
<tr>
<td>J.</td>
<td>Contaminant of impregnated bearing</td>
</tr>
<tr>
<td>K.</td>
<td>Contaminant of impregnated bearing</td>
</tr>
<tr>
<td>9.</td>
<td>Authorized Use</td>
</tr>
<tr>
<td>I.</td>
<td>Through K. To be used in a Spire Corporation's Spi-Wear 200 bearing diagnostic system to test the wear on bearing surfaces.</td>
</tr>
</tbody>
</table>

(See Page 2)
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.

Date March 24, 1989

Paul E. Vause, Jr.
Public Health Physicist

Best Copy Available

For the Office of Radiation Control
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, represen-
tations 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. A. Henson, Manager;
March 21, 1988, signed by D. P. Dumcius, 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

Date    April 11, 1989

For the Office of Radiation Control
Paul E. Vause, Jr.
Public Health Physicist
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.

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

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

(See Page 2)

HRS Form 176, Oct 87 (Replaces Jan 87 edition which may be used)
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Radioactive material 7. Chemical and/or physical form</td>
</tr>
<tr>
<td>G.</td>
<td>Cobalt 56</td>
</tr>
<tr>
<td>H.</td>
<td>Hydrogen 3</td>
</tr>
<tr>
<td>E.</td>
<td>Manganese 54</td>
</tr>
<tr>
<td>J.</td>
<td>Cobalt 57</td>
</tr>
<tr>
<td>K.</td>
<td>Cobalt 58</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Maximum quantity licensee may possess at any one time</td>
</tr>
<tr>
<td>G.</td>
<td>10 impregnated bearings not to exceed 10 micro-curies per bearing</td>
</tr>
<tr>
<td>H.</td>
<td>4 sources; not to exceed 150 milli-curies each</td>
</tr>
<tr>
<td>I.</td>
<td>10 impregnated bearings not to exceed 10 micro-curies per bearing</td>
</tr>
<tr>
<td>J.</td>
<td>Less than one microcurie</td>
</tr>
<tr>
<td>K.</td>
<td>Less than one microcurie</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Authorized Use.</td>
</tr>
<tr>
<td>A.</td>
<td>Evaluation of thoriated cobalt or nickel as material for use in engine components.</td>
</tr>
<tr>
<td>B.</td>
<td>Surface studies of engine parts.</td>
</tr>
<tr>
<td>C.</td>
<td>To be used in Keve Analytical Instrument, Model 6600 for sample analysis.</td>
</tr>
<tr>
<td>D.</td>
<td>To be used in a Hewlett Packard Instrument Company Model 902 gas chromatograph for sample analysis.</td>
</tr>
<tr>
<td>E.</td>
<td>To be used in an Ohmart Corporation Model SR-A source holder as a component of a level detection device.</td>
</tr>
<tr>
<td>F.</td>
<td>To be used in devices approved for receipt under General License provisions as described in Item 6.F., above.</td>
</tr>
</tbody>
</table>
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 3 of 7 Pages

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 Alon 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)
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.
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.

19. 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)
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 680869, 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.

(See Page 7)
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.

Date: September 28, 1989

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

For the Office of Radiation Control

Paul E. Vause, Jr.
Public Health Physicist
Pursuant to Chapter 404, Florida Statutes, and Chapter 100-91, 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.

<table>
<thead>
<tr>
<th>Licensee</th>
<th>With reference to application dated 11/28/90, State of Florida Radioactive Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name: UNITED TECHNOLOGIES CORPORATION Pratt &amp; Whitney Government Engine Business</td>
<td>3. License Number: 90-1 is hereby renewed in its entirety to read as follows:</td>
</tr>
<tr>
<td>2. Address: Post Office Box 109600 Mail Stop 716-22 West Palm Beach, FL 33410-9600</td>
<td>4. Expiration date: January 31, 1996</td>
</tr>
<tr>
<td>5. Category: 3K</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Radioactive material (element and mass number)</th>
<th>Chemical and/or physical form</th>
<th>Maximum quantity licensee may possess at any one time</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Thorium 232</td>
<td>A. Thoriated nickel or cobalt (2% thorium oxide by volume).</td>
<td>A. 200 pounds thorium oxide.</td>
</tr>
<tr>
<td>B. Cadmium 109</td>
<td>B. Sealed source (Isotope Products Model AN-109)</td>
<td>B. 2 sources; not to exceed 20 milli-curies each.</td>
</tr>
<tr>
<td>C. Nickel 63</td>
<td>C. Sealed source (New England Nuclear Model NER-004)</td>
<td>C. 2 sources; not to exceed 10 milli-curies each.</td>
</tr>
<tr>
<td>D. Cesium 137</td>
<td>D. Sealed source (Ohmart Corp. Model A-2100 or A-2102)</td>
<td>D. 1 source not to exceed 80 milli-curies.</td>
</tr>
<tr>
<td>E. Hydrogen 3</td>
<td>E. Titanium tritide foil (Safety Light Corp. Model LAB 508-3)</td>
<td>E. 2 source; not to exceed 150 milli-curies each.</td>
</tr>
<tr>
<td>F. Radioactive material distributed to a General Licensee per 10D-91.306(1) and (4), F.A.C.</td>
<td>F. Sealed source(s) and/or contained source(s)</td>
<td>F. No single source to exceed that quantity authorized for the General License device.</td>
</tr>
</tbody>
</table>

(See Page 2)

HRS Form 176, Oct 87 (Replaces Jan 87 edition which may be used)
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 Sentsx Sensing Technology, Inc. Model 50319 detector cell, used in a Sentsx 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 804.161, Florida Statutes. Also, violations may warrant an administrative fine of up to $1,000.00 per violation per day, pursuant to section 804.162, 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)
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.


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)
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 surface 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 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 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)
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)
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.

Date April 12, 1991

Walter L. Cofer
Public Health Physicist
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.

<table>
<thead>
<tr>
<th>Licensee</th>
<th>With ref. to corr. dated 6/15, 7/6, &amp; 8/23/93, State of Florida Radioactive Materials 3. License Number: 90-1 is hereby amended in its entirety to read as follows:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Address: P. O. Box 109600 Mail Stop 716-22 West Palm Beach, FL 33410-9600</td>
<td>5. Category: 3K</td>
</tr>
<tr>
<td>6. Radioactive material (element and mass number)</td>
<td>Maximum quantity licensee may possess at any one time</td>
</tr>
<tr>
<td>A. Americium 241/strontium 90</td>
<td>A. 4 sources; not to exceed 22 nano-curies each</td>
</tr>
<tr>
<td>B. Cadmium 109</td>
<td>B. 2 sources; not to exceed 20 milli-curies each</td>
</tr>
<tr>
<td>C. Hydrogen 3</td>
<td>C. 2 sources; not to exceed 150 milli-curies each</td>
</tr>
<tr>
<td>D. Thorium 232</td>
<td>D. 200 pounds thorium oxide</td>
</tr>
<tr>
<td>E. Radioactive material distributed to a general licensee per 10D-91.306(1) and (4), F.A.C.</td>
<td>E. No single source to exceed that quantity authorized for the general license</td>
</tr>
<tr>
<td></td>
<td>File copy</td>
</tr>
</tbody>
</table>
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.

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.

(See Page 3)
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.
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. 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.

(See Page 5)
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.
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 nanocuries 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

For the Office of Radiation Control

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

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name:</td>
<td>UNITED TECHNOLOGIES CORPORATION PRATT &amp; WHITNEY</td>
</tr>
<tr>
<td>2. Address:</td>
<td>Government Engine Business P. O. Box 109600 Mail Stop 716-22 West Palm Beach, FL 33410-9600</td>
</tr>
<tr>
<td>3. License Number:</td>
<td>90-1 is hereby renewed in its entirety to read as follows:</td>
</tr>
<tr>
<td>4. Expiration Date:</td>
<td>01/31/2001</td>
</tr>
<tr>
<td>5. Category:</td>
<td>3(K)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Radioactive Material (Element and Mass Number)</th>
<th>Chemical and/or Physical Form</th>
<th>Maximum Quantity Licensee May Possess at Any One Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Gadolinium 153</td>
<td>Sealed Source (Amersham Corp. Model GDC-CY1)</td>
<td>2 sources; not to exceed 1000 millicuries each.</td>
</tr>
<tr>
<td>B. Americium 241/ Cesium 137/ Strontium 90</td>
<td>Sealed source (Amersham Corp. Product Code QCRB1282)</td>
<td>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)</td>
</tr>
<tr>
<td>C. Hydrogen 3</td>
<td>Titanium Tritide Foil (Safety Light Corp. Model LAB 508-3)</td>
<td>2 source; not to exceed 150 millicuries each.</td>
</tr>
</tbody>
</table>

License Number: 90-1
Amendment No.: 51
Control Number: 951218-1300
Page 1 of 4 Pages
Expiration Date: 01/31/2001
STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

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

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 Scentograph 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.
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.
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

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

Issuance Date: MAR 2 9 1996

License Number: 90-1
Amendment No.: 57
Control Number: 9512181390

Category: [K]

Page 4 of 4 Pages(s)
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:

<p>| | | |</p>
<table>
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<tbody>
<tr>
<td>6.</td>
<td>Radioactive material (element and mass number)</td>
<td>7. Chemical and/or physical form</td>
</tr>
<tr>
<td>E.</td>
<td>Cadmium 109</td>
<td>E. Sealed source (Isotope Products Laboratories, Inc. Model AN-109)</td>
</tr>
</tbody>
</table>

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

Issuance Date: MAY 13 1996

Termination: 8/13/02