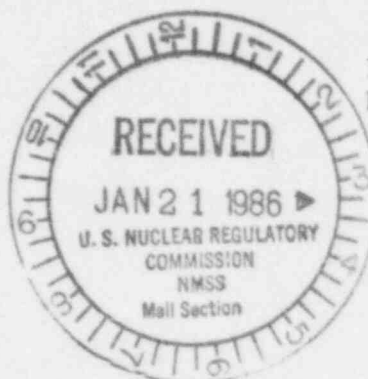


GOODYEAR AEROSPACE CORPORATION
AKRON, OHIO 44315

RETURN TO 396-SS PDR

70-1489
26,1K

Mr. W. T. Crow, Acting Chief
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety, NMSS
Nuclear Regulatory Commission
Washington, D. C. 20555



16 January 1986
Ref: CIHS.1115P

SUBJECT: Termination of NRC Source Material & Special Nuclear Material
License No. SNM-1461 for Goodyear Aerospace Corporation
Advanced Technology Center (ATC)

Dear Mr. Crow:

Goodyear Aerospace Corporation has completed its work at the Wingfoot Lake ATC facility. As part of the decommissioning of this facility all UF₆ contaminated materials, equipment, manufactured goods and waste, has been removed and properly disposed. The last shipment of contaminated materials was picked-up by Teledyne Isotopes on January 8, 1986.

The Wingfoot Lake ATC facility has had a radiation survey conducted by GAC engineers. All results from this survey are well below NRC guidelines, for de-commissioning a facility. The full report of the radiation survey is attached.

Goodyear Aerospace Corporation has completed all the NRC requirements for closing a plant and is requesting Source Material License No. SNM-1461 be terminated so GAC can open the plant for unrestricted use.

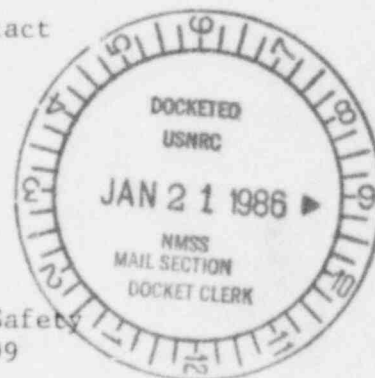
We greatly appreciate your assistance in expediting this procedure. Further work at the WFL facility is required to comply with the Department of Energy (DOE) directives for facility decontamination.

If there are any questions concerning this request please contact Corporate Industrial Hygiene & Safety.

Very truly yours,

J. V. Pflaum
J. V. Pflaum, CIH

Industrial Hygienist, Sr.
Corporate Industrial Hygiene & Safety
Department 131 G1, (216) 796-7299



/j

8602196037 860116
PDR ADOCK 07001489
C PDR

FREE EXEMPT

26328

M E M O R A N D U M

November 21, 1985

UJP-823

To: J V Pflaum, D/131

Subject: Decontamination of Facilities (UF₆ Related Items)
at ATC-WFL Site

References:

- 1) Memorandum, CHIS994P, dated 29 October 1985
- 2) NRC Material License, SNM-1461, Amendment 1,
dated 15 October 1985 (Expiration date 1 April 1986)
- 3) Annex A: Guidelines for Decontamination of
Facilities and Equipment Prior to Release
for Unrestricted use or Termination of
Licenses for Product, Source, or Special
Nuclear Material, U.S. Nuclear Regulatory
Commission, Division of Fuel Cycle and
Material Safety, Washington D.C. 20553

Enclosures:

- 1) Nuclear Material Inventory Summary
- 2) Radiation Survey Map, Advanced Technology Center
- 3) Contaminated Parts Removal Summary
- 4) Direct Floor Surface Radiation Measurement Results
- 5) Floor Wipe Test Radiation Measurement Results

INTRODUCTION

This report was prepared in response to Reference 1) and describes the work that was done at the Advanced Technology Center (ATC) in preparation to release the facility for unrestricted use. The ATC was the only facility operated by Goodyear Aerospace Corporation (GAC) where radioactive material in the form of Uranium Hexafluoride (UF₆) was used. GAC operated the facility under NRC License (Reference 2) to conduct performance tests on developmental gas centrifuge machines from 1974 to 1985. The work was initially sponsored by GAC and then funded on DOE Contract DE-AC05-81OR20789.

A summary of the UF₆ Inventory at the facility is shown in Enclosure 1). The largest quantity of material was normal UF₆. Approximately 300 grams of 1% enriched standard material was used on the Mass Spectrometer.

The specific locations where the material was used or stored are shown on the map presented in Enclosure 2). These locations were:

AGC-1 Gas Stand	Mass Spectrometer Laboratory
AGC-2 Gas Stand	Column Cut Up Area
AGC-4 Gas Stand	Power Hacksaw
Hood and Cut Off Saw	Waste Barrel Storage
Rotor Cut Up Area	Part Storage
UF ₆ Storage Area	Outside Casing Storage
Decontamination Area	

These areas were monitored periodically for any radioactive contamination and recorded in the UF₆ radiation record book that is on file with D.E. Gleghorn, D/131G.

TERMINATION ACTIVITIES

Termination activities were initiated at the ATC in June 1985 using the NRC Guidelines for Decontamination described in Reference 3).

The work included:

1. Disassembly of all contaminated equipment and centrifuge components such as rotors and columns.
2. Packaging of contaminated DOE owned equipment and parts for shipment per DOE instructions.
3. Packaging of contaminated GAC owned equipment for shipment to Teledyne Isotopes, Westwood, New Jersey per Teledyne instructions.
4. Packaging of UF₆ for shipment to Goodyear Atomic for recycle.
5. Radiation survey of the ATC facility

All parts of equipment that came in contact with UF₆ were considered contaminated in excess of the limits and were therefore disassembled according to the following procedures:

1. Applied "Radioactive Material" stickers to contaminated parts and equipment.
2. Limited access to work area to only personnel wearing protective clothing - paper coveralls, gloves, shoe covers and half face respirator masks.
3. Provided tools and supplies to work area.
4. Disassembled equipment only to major assembly level and covered openings on pipes, pumps and valves with duct tape. Long columns were first cut to 20 ft lengths and then power hacksawed to about 3 ft lengths.
5. Placed parts and equipment on wood skids and moved skids to packaging area.
6. Checked floor and tools in work area for contamination using Alpha Counter. Cleaned contaminated areas with detergent water and sponge. Disposed of wash solution in Teledyne waste barrel.
7. Disposed of contaminated clothing in Teledyne barrels.

The 7 contaminated gas test rotors were cut up in the designated area shown in Enclosure 2 map. For this work, the following additional precautions were taken:

1. Roped off the work area which was approximately 20 feet wide by 50 feet long.
2. Placed plastic drop cloths on floor inside roped off area. Operated air monitors in work area.
3. Cut rotors to 40 inch lengths.
4. Mopped inside surfaces of rotor sections with detergent water solution to remove visible green uranium oxide residue.
5. Poured contaminated wash water into Teledyne waste barrels.
6. Placed plastic drop cloth on floor in front of hood and cut off saw area shown on Enclosure 2) map.
7. Moved rotor sections to hood and cut off saw.
8. Cut rotor sections axially into two pieces and stacked in cardboard boxes.
9. Taped boxes shut, identified contents and stickered boxes with "Radioactive Material" labels.
10. Rolled up drop cloths and placed in cardboard boxes together with contaminated protective clothing worn by workers.

The radioactive contaminated DOE owned equipment that was designated for shipment to other DOE installations was packaged in wood boxes. The inside of each wood box was lined with 6-mil thick polyethylene plastic sheet. After box lids were installed, the boxes were banded and the contents identified.

The GAC owned radioactive contaminated equipment and liquid waste was packaged in steel Teledyne barrels (Type 55-DSM and DWLVL-A). These barrels were sealed and weighed in accordance with Teledyne instructions.

The UF₆ containers were packaged in accordance with NRC and DOT requirements. This material was transferred to Goodyear Atomic on Nuclear Transaction Report No. 40 (NRC 741 Form, dated 9-27-85 from XGG to BXA).

The removal of all DOE owned contaminated equipment was completed by 30 October 1985. A summary of the removals is presented in Enclosure 3). The parts for shipment to Teledyne Isotopes were stored in a secured area for a later pick up.

The radiation survey of the ATC facility was conducted after the removal of all contaminated hardware. The areas surveyed are shown on the map presented in Enclosure 2). Results of the direct radiation measurements are presented in Enclosure 4). These results indicated there is slight alpha contamination of the floor in three specific areas (Decontamination area, rotor cut up area and power hacksaw area) where chemically inert compounds of uranium penetrated into the concrete and could not be removed by scrub and mop procedures. Contamination is well below the maximum permissible of 15,000 cpm Alpha/100 CM². As noted, there was no measurable Beta or Gamma radiation.

Results of the floor wipe tests are presented in Enclosure 5). These results indicated slight contamination of the floor in the rotor cut up area, decontamination area, power hacksaw and waste barrel storage area. It should be noted that the normal background count was 0 to 4 cpm as specified in Note 3 so the measured readings at 4 cpm or lower were not considered significant.

This report does not include data on outside air monitoring, water effluent, or personnel related items such as film badges, urine samples, and physicals. These records have been retained by Industrial Hygiene and Safety, D/131.

F. D. Yoder Jr

F D Yoder, D/486

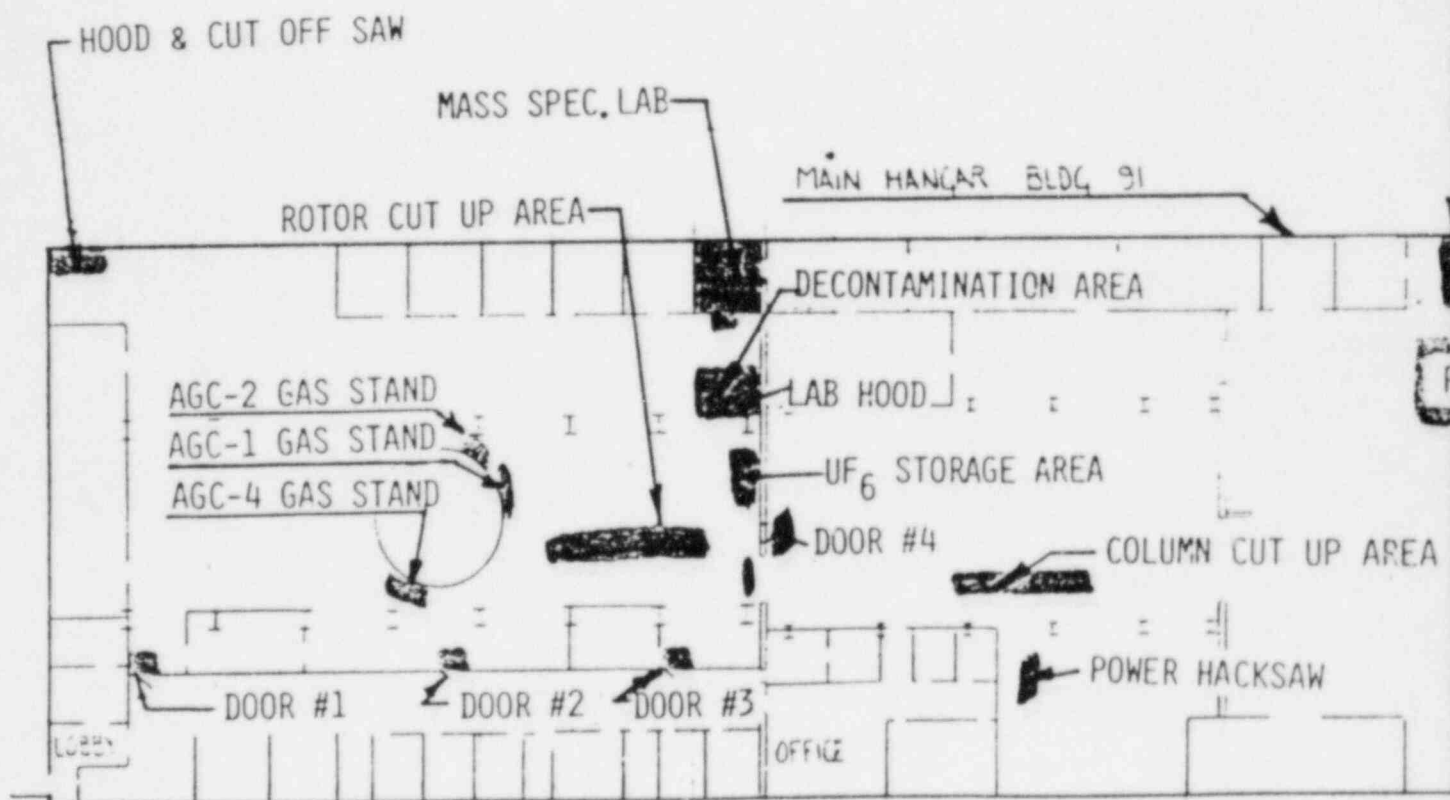
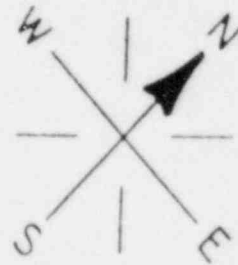
rks

cc: D.E. Gleghorn	D/131G
D.C. Cully	D/486C
D.D. Seemann	D/392D
E.P. Prentice	D/301D
P.R. Rosio	D/537 WFL
J.J. Adams	D/538D
R.D. Lilley	D/486C

UF₆ INVENTORY SUMMARY

YEAR	REPORT NUMBER		GRAMS - UF ₆			
	JP 1/	UJP	BEGINNING	ADDITIONS	REMOVALS	ENDING
1974	1234	821	-0-	49454.8	-0-	49454.8
1975	1908	819	49454.8	169.9	28726.1	20898.6
1976	2488	811	20898.6	25499.0	1152.6	45245.0
1977	3229	812	45245.0	499.1	2537.7	43206.5
1978	4066	813	43206.5	25068.7	28962.5	39312.8
1979	5436	814	39312.8	25250.1	18330.2	46232.6
1980	6418	815	46232.6	84.4	-0-	46317.0
1981	7352	816	46317.0	25067.0	17708.4	53675.6
1982	8551	817	53675.6	182.0	25.8	53831.8
1983	17589	818	53831.8	24824.0	33783.5	44872.3
1984	18358	820	44872.3	165.0	6863.4	38173.9
1985	-	822	38173.9	-0-	38173.9	-0-

1/ Report Numbers with prefix "JP" are classified. These reports were declassified and issued new numbers with prefix "UJP" in November 1985. Copies of the "UJP" reports may be obtained from D.E. Gleghorn, D/131/G.



RADIATION SURVEY MAP

ADVANCED TECHNOLOGY CENTER

HANGAR SPACE ALLOCATIONS

	<u>SQ. FT.</u>	<u>BLDG.</u>
1) OFFICES (INCLUDING LOBBY)	9440	91
2) LAB	1535	91
3) HIGH BAY: UNDER 20 TON CRANE	8460	91
HIGH BAY: SIDE BAY UNDER MEZZANINE	10660	91
4) LOW BAY: UNDER 5 TON CRANE	7170	91
LOW BAY: SIDE BAY UNDER MEZZANINE	6870	91
5) MAINTENANCE	2465	91
6) HANGAR: HIGH BAY	47400	91
HANGAR: SIDE BAY	18800	91
 TOTAL	 112800	

(HANGAR DIMENSIONS: 141' x 800' = 112800 FT²)

WASTE BARREL STORAGE:

ARTS STORAGE

NOTE: DARKENED AREAS DENOTE
LOCATIONS OF RADIATION
SURVEY

TI
APERTURE
CARD

Also Available On
Aperture Card

OUTSIDE CASING STORAGE

8602190037-01

CONTAMINATED PARTS REMOVAL SUMMARY

GAC BILL OF LADING NUMBER	DATE	DESTINATION
59979	9-17-85	Martin Marietta, Oak Ridge, Tennessee
59980	9-27-85	Goodyear Atomic, Piketon, Ohio
59983	9-30-85	Goodyear Atomic, Piketon, Ohio
59982	9-30-85	Goodyear Atomic, Piketon, Ohio
59985	9-30-85	Goodyear Atomic, Piketon, Ohio
59916	10-18-85	Martin Marietta, Oak Ridge, Tennessee
59920	10-31-85	Goodyear Atomic, Piketon, Ohio

DIRECT FLOOR SURFACE RADIATION MEASUREMENT RESULTS 1/

LOCATION <u>2/</u>	BETA-GAMMA READING <u>3/</u> (mR/HR)	ALPHA READING <u>4/</u> (CPM)	CORRECTED ALPHA <u>5/</u> (CPM/100 CM ²)
Hood and Cut Off Saw	0	0	0
Mass Spec Lab	0	0	0
Decontamination Area	0	500 to 1100	795 to 1749
Lab. Hood-Filter Vent (2nd Floor)	0	0	0
UF ₆ Storage Area	0	0	0
Rotor Cut Up Area	0	400 to 1500	636 to 2385
Door #4	0	0	0
AGC-1 Gas Stand Area	0	0	0
AGC-2 Gas Stand Area	0	0	0
AGC-4 Gas Stand Area	0	0	0
Column Cut Up Area	0	0	0
Power Hacksaw Area	0	300	477
Parts Storage Area	0	0	0
Waste Barrel Storage Area	0	0	0
Outside Casing Storage Area	0	0	0

1/ Measurements were conducted November 6 and 7, 1985

2/ Refer to Enclosure 2)Map for Locations.

3/ Beta-Gamma readings were made using Mini-Rad II, Radiation Monitor, S/N 20-0982. Manufacturer's calibration.

4/ Alpha readings were made using an Eberline Alpha Counter, Model PAC-4S. The Instrument was calibrated on November 6, 1985 using Eberline Standards 592-245. Calibration results were as follows:

Standard (CPM)	Instrument (CPM)
237	300
1190	1000

5/ Corrected Alpha (CPM/100CM²) were obtained by multiplying the Alpha readings by 1.59 since the actual area of the detector was 63 CM².

$$\frac{100 \text{ CM}^2}{63 \text{ CM}^2} = 1.59$$

FLOOR WIPE TEST RADIATION MEASUREMENT RESULTS 1/

LOCATION 2/	ALPHA READINGS 3/ (Average - CPM)
Door #1	3
Door #2	3
Door #3	2
Door #4	3
Lobby Door	3
Mass Spec Lab. Door	4
AGC-1 Gas Stand Area	3
AGC-2 Gas Stand Area	3
AGC-4 Gas Stand Area	1
Hood and Cut Off Saw	3
Rotor Cut Up Area	34
Decontamination Area	31
Column Cut Up Area	2
Power Hacksaw	7
Parts Storage Area	2
Waste Barrel Storage Area	12

1/ Wipe Tests were conducted November 6, 1985. Each wipe area was 100 CM².

2/ Refer to Enclosure 2 Map for Locations

3/ Alpha Readings were made using an Eberline Scintillation Detector, Model LASS-1. The detector was calibrated November 6, 1985 using Eberline Standards 592-245. Calibration results were as follows:

STANDARD (CPM)	INSTRUMENT (CPM)	AVERAGE
237	237	250
237	274	
237	248	
237	251	
237	239	
BLANK 0	2	2
0	4	
0	0	
0	3	

DOCKET NO. 70-1489
CONTROL NO. 26328
DATE OF DOC. 01/16/86
DATE RCVD. 01/21/86
FCUF ☒ PDR ☒
FCAP ☐ LPDR ☐
WM ☐ I&E REF. ☒
WMUR ☐ SAFEGUARDS ☒
FCTC ☐ OTHER ☐

DESCRIPTION:

request for a
termination

01/23/86 INITIAL CEC