U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 80-02

Docket No. 30-10859

License No. 37-14600-01 Priority D1 Category IV

Licensee: Applied Health Physics
2986 Industrial Boulevard
Bethel Park, Pennsylvania

Facility Name: _____

Inspection at: Bethel Park, Pennsylvania

Inspection conducted: June 27 and July 15, 1980

Inspectors: Francis Costello — September 5, 1980
F. Costello, Radiation Specialist — date signed

Claude Rowe — September 5, 1980
C. Rowe, Radiation Specialist — date signed

Approved by: John D. Kinneman — September 5, 1980
John D. Kinneman, Chief, Materials Radiological Protection Section — date signed

Inspection Summary:

Inspection on June 27, July 15, and August 19, 1980 (Report No. 30-10859/80-02)

Areas Inspected: Special unannounced inspection including repackaging and shipment of radioactive waste, and independent measurements. The inspection involved ten inspector hours on-site by two NRC inspectors.

Results: The inspectors determined that the licensee did not comply with the July 2, 1980 Order as modified on July 18, 1980 requiring disposal of all radioactive waste. This constitutes continued noncompliance with Condition 6 of License 37-14600-01.

Region I Form 12
(Rev. April 77)

DETAILS

1. Persons Contacted

*Mr. R. Gallaghar, President
*Ms. V. Locke, Office Manager

*Denotes those present at exit interview.

2. June 27, 1980 Inspection

The inspector reviewed the licensee's progress in meeting the commitment made at the April 1 meeting in King of Prussia, to dispose of all radioactive waste by July 1, 1980. The inspector determined that the repackaging of the waste was being conducted in compliance with NRC regulations and the licensee's letter dated December 14, 1979. Proper radiation and contamination control procedures were employed including protective clothing, contamination surveys, and air sampling. The individual repackaging the waste was properly trained in the required radiation safety precautions.

The inspector was informed that the licensee would be unable to repackage and transfer all radioactive waste to an authorized land burial facility by July 1, 1980. The repackaging operation began on June 23, 1980 and the licensee did not have the capability of completing the task within the deadline.

The inspector was also informed that most of the drums opened thus far did not meet current burial site criteria. Thirty drums had been repackaged as of the date of the inspection. Approximately 110 drums remained to be repackaged.

3. July 10, 1980 Telephone Conversation

An inspector, Mr. Costello, spoke with a licensee representative, Mr. John Nipar, on July 10, 1980 to determine the status of the licensee's progress in repackaging the radioactive waste. The inspector was informed that 62 drums remained to be repackaged. The licensee representative stated that they lacked sufficient approved absorbent material. The licensee representative stated that he did not believe that the July 18, 1980 deadline would be met. The inspector offered NRC assistance in locating a source of approved absorbent material.

4. July 15, 1980 Inspection

a. Repackaging of Radioactive Waste

The inspection was conducted at the licensee's facility on July 15, 1980 to determine the licensee's progress in meeting the deadline of July 18, 1980, contained in the Order dated July 3, 1980, to dispose of all radioactive waste. The inspectors observed that, as of the July 15, 1980 inspection, 95 of the approximately 140 drums had been completed. The inspectors requested an indication of the licensee's day-to-day progress in repackaging. The licensee provided this information which is tabulated in Attachment 1 to this report. The information was provided with the licensee's letter dated July 24, 1980.

The inspectors determined that the licensee plans to ship the packaged radioactive waste to the Nuclear Engineering Company facility in Richland, Washington but that the licensee had not yet obtained a user's permit from the state of Washington. Licensee representatives stated that an application for a permit would soon be sent to the state of Washington.

The inspectors questioned the licensee representatives as to the cause of the delays in repackaging the waste. The licensee representatives stated that a shortage of absorbent material stopped the work for several days until the state of Washington gave permission for the licensee to use Fluor-Dry 85 absorbent material. In addition, the region had been experiencing unusually hot weather which slowed the licensee's progress.

b. Indeperdent Measurements

The inspectors surveyed several fiberboard boxes which had been filled with waste identified by the licensee as nonradioactive. The inspectors used a Ludlum Model 16 Analyzer with a 1"x1" sodium iodide scintillation detector in an improvised lead shield to reduce background and provide directionality. The inspectors and licensee representatives observed readings that indicated the presence of radioactive material in several of these boxes. Licensee representatives stated that they planned to resurvey all waste identified as nonradioactive to ensure against the improper disposal of radioactive waste.

5. August 19, 1980 Inspection

a. Repackaging of Radioactive Waste

The inspection was conducted at the licensee's facility on August 19, 1980 to determine the licensee's progress in meeting a deadline of August 18, 1980, contained in the Order dated July 2, 1980 as modified July 18, 1980, to dispose of all radioactive waste. The inspector determined that a shipment of waste had been made by the licensee on August 18, 1980 to the Nuclear Engineering Company facility in Richland, Washington. The inspector reviewed the documentation of this shipment which indicated that the shipment consisted of 71 drums of 55 gallon capacity which contained 523 cubic feet of material weighing 15,335.5 pounds with a total activity of 1207.66 mCi of mixed byproduct material.

The inspector questioned the licensee on the status of any remaining rdioactive material. The licensee stated that he still possessed six 55 gallon drums of waste containing a total of 1-1.5 millicuries of Americium-241, 29-five gallon pails of liquid waste which had been removed from the drums which had been repackaged, 61 fiberboard boxes which had been filled with waste identified as non-radioactive during repackaging, and approximately 7.6 curies of Tritium gas in pressurized cans.

The inspector questioned the licensee on his procedure used for analyses of activity remaining in the fiberboard boxes. The licensee stated that each box had been individually counted with a 4000 channel analyzer equipped with a 5 inch NaI crystal. The licensee further stated that the background count rate was 197 C/M and that 39 of the fiberboard boxes contained measureable levels of radioactivity. The inspector verified this information during review of the licensee's documentation of the counting results. The licensees records indicated that the major portion of the activity remaining in the fiberboard boxes was Selenium-75.

The inspector reviewed results of the licensee's analysis from samples taken of 14 of the five gallon pails of liquid waste. The highest concentrations were observed to be 22.9 pCi/ml C-14, about 31.8 pCi/ml P-32, and 389.1 pCi/ml H-3. Results of sample taken by the licensee from the remaining 15 pails of liquid waste were not available for review at the time of the inspection. The licensee stated that he intended to dispose of the fiberboard boxes of material by incineration and planned to return the liquid waste to the hospitals for dilution and discharge via their sanitary sewer systems since he felt all remaining activity was minimal.

b. Independent Measurements

The inspector surveyed the fiberboard boxes which contained the remainig solid waste and the pails containing the liquid waste using a Ludlum Model 16 Analyzer with a 1" by 1" sodium iodide scintillation detector for the survey. The inspector and licensee representative observed readings that indicated the presence of radioactive material in several of the boxes and pails.

c. Exit Interview

The inspector met with the licensee representative at the conclusion of the inspection on August 19, 1980. The inspector informed the licensee representative that it was his opinion that Applied Health Physics still possessed radioactive waste and should not dispose of the fiberboard boxes or liquid waste without prior approval. The licensee representative stated that he would not dispose of the material without prior approval and would apply for an extension of the Order if required, but in his opinion that he had complied with the intent of the Order.

6. August 20, 1980 Telephone Conversation

On August 20, 1980 Mr. James Allan, Deputy Director and Mr. J. Kinneman, Chief, Materials Radiological Protection Section discussed the inspection results with Mr. Gallagher. Mr. Allan stated that it was the Region's position that Applied Health Physics, Inc. had not met the conditions of the order dated July 2, 1980 as modified July 18, 1980. Mr. Gallagher stated that he believed he had met the terms of the Order. The licensee agreed the following actions would be taken:

a. No burial site will accept Americium-241 contaminated waste, therefore this will be maintained in secure storage until a disposal method becomes available.

b. The NECO facility at Beatty Nevada can only accept gaseous tritium at a pressure of 1.5 atmospheres or less. Since the licensee has no information concerning the pressure in the containers of tritium and since these are in their original condition, the licensee will attempt to identify an appropriately authorized licensee to transfer these to for use or disposal. This will be accomplished as soon as possible, but no later than September 30, 1980.

c. Liquid waste will be solidified and sent for authorized land burial as required by the licensee's procedures. This will be completed as soon as possible, but no later than September 30, 1980.

d. The licensee stated his belief that the most satisfactory method of disposal for the material in the fiberboard boxes was incineration, since many contain biologicals. The licensee will either:

1) Make application for limits to be used for releasing this material as nonradioactive and incinerate that material which meets these limits, shipping the remainder as radioactive waste or;

2) Make application for authorization to incincerate radioactive material on a one time basis.

If neither of the above can be accomplished before September 30, 1980, the licensee will package all such material and ship it to an authorized burial site.

7. Telephone Conversation - August 22, 1980

An inspector, Mr. F. Costello, spoke with the licensee president on August 22, 1980 to determine the licensee's progress in disposing of the remaining waste. The licensee president stated that he hoped to receive approval from NRC Licensing to incinerate the low-level solid waste currently in boxes. He confirmed his commitment to complete the disposal of all radioactive waste by September 30, 1980.

Attachment 1

Summary of Applied Health Physics Progress in Repackaging Radioactive Waste

The licensee is sorting waste as it is taken from radioactive waste drums. Radioactive waste is put into 55 gallon drums, liquids are solidified, and nonradioactive wastes are put into fiberboard boxes.

Date	Drums Repackaged
6/24	4
6/25	9
6/26	11
6/27	6
6/28	11
6/29	9
6/30	5
7/1	5
7/2	5
7/3	7
7/7	4
7/8	6
7/9	4
7/10	3
7/11	4
7/15	5
7/17	4
7/18	5
7/21	6
7/22	5
7/23	5
7/24	5
Total	128