LPDR (2) SDA Files
70-135

Babcock & Wilcox

Nuclear Materials Division
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August 28, 1979

Mr. Boyce H. Grier, Director, Region I
Office of Inspection and Enforcement
United States Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Mr. Grier:

Attached is our report of radioactive effluents discharged to unrestricted areas as a result of work performed under licenses SNM-145 and SNM-414.

This report is furnished for the purposes of compliance with the effluent monitoring and reporting requirements to Title 10, Chapter 1, Part 40 and Part 70 of the Code of Federal Regulations.

This report covers discharges during the period from January 1, 1979 to June 30, 1979. The information provided is the best available from monitoring data obtained as a condition of our licenses.

If you have any questions concerning this report, please contact me.

Sincerely,

David G. Ortz / for

Michael A. Austin
Manager, Technical Control

MAA/mhb

Attachments

cc: NRC Regional Office (2 copies)
Director, Inspection & Enforcement (6 copies)
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

The following table summarized the Nuclear Materials & Manufacturing Division, Pennsylvania Operations (PA Ops) discharges to unrestricted areas via liquid and gaseous effluents from each of our licensed facilities:

	Liquid		Gaseous	
	Alpha	Beta	Alpha	Beta
Apollo Plant	2.52E-1	5.69E-1	$9.78E^{-4}$	*
Decontamination Facility	3.64E-3	8.75E-2	$1.79E^{-8}$	$5.69E^{-8}$
Metals Complex	2.90E-5	7.8E-5	*	*
Plutonium Plant	1.10E-5	2.10E-5	Not Significant	*
T-2 Facility	7.00E-6	1.40E-5	Not Significant	*
Totals	2.56E-1	6.56E-1	$9.78E^{-4}$	$5.69E^{-8}$

* Not determined

All quantities listed above are in curies

The following is a description of significant isotopes to which we attribute the above activities from each facility:

Apollo Plant:

Virtually 100 percent of the alpha activity from the Apollo Plant is due to uranium 234-235-238; and, virtually 100 percent of the beta activity is due to thorium/protactanium-234.

Decontamination Facility:

PA Ops attributes the following percentages and quantities to the activity from the Decontamination Facility liquid effluent:

Alpha: Activity was due to uranium 234-235-238.

Beta:	Co-60	25%	0.020 curies
	Cs-134	4%	0.003 "
	Cs-137	5%	0.004 "
	RuRh-106	66%	0.060 "
		100%	0.087 curies

Metals Complex:

The low levels of radioactivity in the liquid effluent from the Metals Complex are from residual activity in the drain lines and waste tanks. PA Ops does not identify the isotopes responsible for the activity; no radioactive materials are being processed in the Metals Complex at this time. However, historically, uranium-234-235-238 have been identified as the alpha emitters, and thorium/protactanium 234 as the beta emitters.

Plutonium Plant:

PA Ops assigns the alpha activity to Pu 238-239. Beta activity is attributed to Pu-241 and Am-241.

T-2 Facility

The low levels of radioactivity in the liquid effluent from the T-2 Facility are from residual activities in the drain lines and waste tanks. This facility is presently being decommissioned and all machinery and equipment has been removed. Historically, uranium 234-235-238 have been identified as the alpha emitters, and thorium 231 and protactanium-234 as the beta emitters. The activity results from the stack samples were statistically insignificant.

During the second half of 1978 PA Ops discharged a total of 1.08 curies while the tota` discharged in the first half of 1979 was 0.91 curies.