

<b>AGS Complex Machine Studies</b> <b>(AGS Studies Report No. 336)</b> <b>Report on Protons Incident on Booster Dump in 1994</b>
<b>Study Period:</b> February 9 - September 7, 1994
<b>Participants:</b> E. Bleser and P. Ingrassia
<b>Reported by:</b> E. Bleser
<b>Machine:</b> Booster
<b>Beam:</b> Normal Protons
<b>Tools:</b> Thermoluminescent detectors mounted in Booster tunnel
<b>Aim:</b> AGS-OPM 2.5 (1/4/93) specifies that the total number of 1.5 GeV equivalent protons deposited on the Booster dump in a year shall not exceed $2.5 \times 10^{19}$ . This note reports the results of the monitoring program for 1994.

## PROCEDURES

The procedures are detailed in AGS Studies Report No. 301.

## RESULTS

Table 1 summarizes the data used in this report. The units are nominally nanoCuries, but we can take them as arbitrary. The calibration run in 1993 put  $1.88 \times 10^{15}$  protons into the dump. Using this number we calculate in Table 2 that in 1994 we had put  $0.5 \times 10^{19}$  protons into the dump, well below the allowed level of  $2.5 \times 10^{19}$ .

TABLE 1

BOOSTER DUMP MONITORING TLD RESULTS

"Net nC" for TLD-700 units

1994

RUN NUMBER	1	2	3		CALIB
INSTALLATION DATE	2/9/94	4/20/94	6/28/94		7/22/93
REMOVAL DATE	4/20/94	6/28/94	9/7/94		7/22/93
DAYS of EXPOSURE	70	69	71		1
DATE of REPORT	MAY 19	AUG 2	OCT 18		JULY 30/93

DETECTOR

3a	100195	220824	250448		160.39
3b	101520	221558	210588		134.74
4a	36947	92275	46115		79.26
4b	37026	99614	45634		69.83
5a	19284	49191	46571		43.7
5b	19027	51210	54301		40.35

TABLE 2  
SUMMARY of RESULTS

1994

RUN NUMBER	AVERAGE of RATIOS to CALIBRATION RUN	STD	TOTAL PROTONS 10 <sup>15</sup>	PROTONS per DAY 10 <sup>15</sup>
------------	--------------------------------------	-----	--------------------------------	----------------------------------

CALIBRAT	1		1.88	1.9
1	547.9	109.8	1030	14.7
2	1334.4	174.7	2509	36.4
3	1041.7	380.9	1958	27.6

TOTAL 1.5 GeV EQUIVALENT PROTONS on DUMP	5497
--	------

OPM LIMIT for DUMP	25000
--------------------	-------