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# Interim Report on Protons Incident on Booster Dump in 1995

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**U.S. Department of Energy**

USDOE Office of Science (SC)

# DISCLAIMER

| AGS Complex Machine Studies<br>(AGS Studies Report No. 337)<br>Interim Report on Protons Incident on Booster Dump in 1995 |
|---|
| **Study Period**: December 21, 1994 - May 17, 1995 |
| **Participants**: E. Bleser and P. Ingrassia |
| **Reported by**: E. Bleser |
| **Machine**: Booster |
| **Beam**: Normal Protons |
| **Tools**: Thermoluminescent detectors mounted in Booster tunnel |
| **Aim**: 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 x $10^{19}$. This note reports the interim results of the monitoring program for 1995. |

## 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 x $10^{15}$ protons into the dump. Using this number we calculate in Table 2 that as of May 17, 1995 we had put 0.75 x $10^{19}$ protons into the dump, well below the allowed level of 2.5 x $10^{19}$.

## TABLE 1

# BOOSTER DUMP MONITORING TLD RESULTS

"Net nC" for TLD-700 units

PARTIAL RESULTS FOR 1995

| RUN NUMBER | 1 | 2 | 3 | 4 | CALIB |
|---|---|---|---|---|---|
| INSTALLATION DATE | 12/21/94 | 2/1/95 | 2/28/95 | 4/12/95 | 7/22/93 |
| REMOVAL DATE | 2/1/95 | 2/28/95 | 4/12/95 | 5/17/95 | 7/22/93 |
| DAYS of EXPOSURE | 42 | 27 | 43 | 35 | 1 |
| DATE of REPORT | FEB 8 | MAR 28 | MAY 18 | MAY 22 | JULY 30/93 |
| DETECTOR | | | | | |
| 3a | 88842 | 118708 | 263431 | 205946 | 160.39 |
| 3b | 98597 | 115818 | NA | 151038 | 134.74 |
| 4a | 34010 | 52627 | 120718 | 70865 | 79.26 |
| 4b | 40525 | 49063 | 152322 | 47381 | 69.83 |
| 5a | 16879 | 38307 | 75470 | 27515 | 43.7 |
| 5b | 23721 | 27133 | 70923 | 37284 | 40.35 |

## TABLE 2

# SUMMARY of RESULTS

PARTIAL RESULTS FOR 1995

| RUN NUMBER | AVERAGE of RATIOS to CALIBRATION RUN | STD | TOTAL PROTONS 10^15 | PROTONS per DAY 10^15 |
|---|---|---|---|---|
| CALIBRAT | 1 | | 1.88 | 1.9 |
| | | | | |
| 1 | 544.9 | 113.1 | 1024 | 24.4 |
| 2 | 752.6 | 85.4 | 1415 | 52.4 |
| 3 | 1766.3 | 222.9 | 3321 | 77.2 |
| 4 | 921.9 | 229.6 | 1733 | 49.5 |

| | |
|---|---|
| TOTAL 1.5 GeV EQUIVALENT PROTONS on DUMP | 7493 |

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