

**C-AD**

**Radiation**

**Safety**

**Committee**

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Minutes of Radiation Safety Sub-Committee of February 11, 2004

## **The A20 Transformer Interlock for RHIC Operations**

Present: L. Ahrens, D. Beavis, A. Etkin, J.W. Glenn, Ray Karol, P. Ingrassia, E. Lessard, D. Meany, D. Ryan, M. Wilinski

In reviewing the C-A TPL 04-07, "Temporary Procedure to Limit the Number of P<sup>+</sup> in AtR Transfer Line", the RSC chair became concerned that there may be a process in which the A20 transformer would be "bypassed". This review determined that no such process exists.

An explicit check as part of the initial checkout of the device should verify that a change to a lower gain on the A20 transformer would interlock the beam by decreasing the keep alive signal below the allowed level. **(CK-Polarized-AtR-fy2004-357)**

The A20 transformer is both in the interlocks and the fast beam interrupt (FBI) system. The committee had requested that it be in the FBI, which would provide for a faster turn-off than the interlocks. The FBI system is not under the same level of configuration control as the access controls system, which will act before the next cycle. If the 8 and 20-degree bends are off, then the a20 transformer is to be ignored for radiation safety. This is true for the interlocks but apparently not for the FBI. Apparently, the A20 transformer will cause beam interrupts when the AtR is in a safe mode. This will cause substantial operational problems for this year. The committee recommends that the signal to the FBI not pull the beam permit if the AtR is off in hardware. If it is not possible to make this hardware modification due to time and resource limitations, then the committee recommend that a procedure be developed for masking the A20 transformer signal in the FBI system. **(Act-1, Feb. 20, L. Ahrens)**

It was also noted that the increase beam intensity for both Au and P<sup>+</sup> may make the existing limit of 6\*10<sup>11</sup> Protons/cycle an operational problem. This limit was established in the RSC meeting of Sept. 19, 2001. J.W. Glenn will prepare a proposal/justification for raising this limit. It will be distributed to the committee and discussed as soon as possible.

A possible change in the procedure used to monitor losses in the RHIC may also be discussed in conjunction with the increased Au and P<sup>+</sup> intensities.

CC: RSC Minutes file  
ATR file  
RHIC File  
RSC  
Present