

Friday 28 February 1997

K. Reece

Minutes of Meeting: Radiation Safety Committee, sub-committee

Date: Friday 28 February 1997

Present: L. Ahrens, D. Beavis, R. Frankel, W. Glenn, R. Heyder, I. Marneris, A. McGeary, A. McNerney, K. Reece, T. Robinson.

Subject: 921 PLC (div B) code change.

In the course of testing the PASS system for the g-2 areas, a problem was discovered in the muon storage ring access controls. The electric strike on the access door for the muon storage ring was not able to be energized under Controlled Access with a simultaneous release from MCR. This was traced to an incorrect address in the PLC ladder logic in Div B only. The incorrect address was similar to the correct address, (aside: all gates have the same "prefix" and are differentiated only by the last number(s) in the address). The incorrect address was actually the address for VTGE2 electric strike.

At the request of the RSC, an independent review of the Div B PLC code was conducted by I. Marneris and T. Russo (working with R. Heyder). In the PLC code, the address in question is used in a ladder "rung" that leads to an output, (in this instance, the simultaneous release of the electric strike on the muon ring door). A "code search" was then done and this output was found to occur 10 times in Div B 921 PLC (including the case of the muon ring door). This output is *never* used as an input in the code.

The proposed corrective measures were;

1. Replace the incorrect address with the correct address in this "ladder rung".
2. Load this Div B PLC code from the 921 PLC into another PLC (I. Marneris) and repeat the "code search" for use of this "rung output"; confirm only 10 times in the PLC code.
3. Document the logical function of each of these 10 uses of this particular output.
4. Determine (with A. McGeary) how to functionally test each of these 10 uses of this output.

5. Complete the functional testing.
6. File an ECN to formally track this code change (along with version number).
7. Document this change in the PASS logbook.

This code change was approved by this RSC sub-committee.

It was noted that the RHIC Security Group is going to acquire an "code simulator" for use in "de-bugging" code prior to implementation in the field PLCs. This will aid in the process of finding coding errors in both machines in that although they are independently programmed, they must lead to the same "output states".

cc: RSC file  
Attendees  
T. Russo