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C-A OPERATIONS PROCEDURES MANUAL

(Booster /AGS Ring Power Supply Group Procedure EPS-008)

Note: This document was formerly a C-A Group Procedure. The content of the group procedure was reviewed by the Technical Supervisor. All approvals and/or issue dates of the original group procedure are maintained for present use.

15.3.1.8 AGS Klixon Test Procedure

Text Pages 3 through 3

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: _____ *Signature on File* _____
 Collider-Accelerator Department Chairman Date

M. Bannon

Booster/AGS Ring Power Supply Systems
Group Procedure EPS-A-008
Revision 00

1. Purpose

- 1.1 The purpose of the following test is to check all the newly installed wiring from the following locations:
- 1.2 Wiring from each magnet (20 total in each superperiod) to the Magnet Monitoring Box.
- 1.3 Wiring from each Magnet Monitoring Box to Bldg 928, Rack 50__ to check that we get an interlock fault on the PLC that latches. This fault should stay latched even if fault clears and should stay latched until a reset signal to the PLC is sent.
- 1.4 Wiring hardware that trips the Siemens Rectifiers independent of the PLC program.
- 1.5 The PLC program to insure it works properly and takes the correct action when a fault is detected.

2. Safety Precautions

- 2.1 The Maintenance Coordinator must be notified of the testing we want to do so that the proper LOTO can be removed to allow us to get 120vac to the Magnet Monitor Box.
- 2.2 Test only one superperiod at a time. Keep the other superperiod 120vac off until testing of that superperiod is ready to be tested.
- 2.3 Put up a sign designating that testing of the Klixon circuit in that superperiod is started and have a contact person and phone # and pager # on the sign. Tape these signs to the caution tape that you will also put up in front of the 20 magnets in the superperiod under test.

3. Procedure

- 3.1 First get 120vac power to the box from circuit breaker and through FDS.
- 3.2 Make sure all cables are proper installed on the Magnet Monitor Box.
- 3.3 Make sure the two person team has radios so constant communicate can be kept while test is being performed.
- 3.4 Make sure caution tape and signs are properly displayed.
- 3.5 Open a Klixon wiring harness quick connect lug starting with the first magnet of that superperiod (ex. A1), this will simulate a fault on that magnet as if a Klixon opened on an over-temp fault.
- 3.6 Check that the proper fault light occurred on the Magnet Monitor Box (ex. A1 OV-TP)
- 3.7 Check that the proper fault indication occurred on the PLC (ex. A1 OV-TP))
- 3.8 Check that the hardwire relay drop out (de-energizes) for that superperiod
- 3.9 Check that hardwire interlock trips the Siemens Rectifier System.
- 3.10 Check that the PLC software program trips the Siemens Rectifier System
- 3.11 Check that even when quick connect wire in ring is reconnected that the PLC program stays latched until a reset signal is sent to the PLC. (we want the PLC to stay latched until reset signal is sent so in case we get any intermittent problems in the wiring the PLC will catch and latch the fault)
- 3.12 Reset the PLC and check that system is brought back to a ready state. (all interlocks cleared)
- 3.13 Record all problems found and what the repair was. (every problem is to be documented- from a bad crimp to a loose wire, etc.)
- 3.14 Repeat steps 3.5 to 3.13 for each magnet in that superperiod.
- 3.15 Repeat steps 3.1 to 3.14 for each superperiod that is to be tested.