If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

2.30 Monitoring, Controlling and Minimizing Unnecessary Power Consumption by C-A Accelerators

Text Pages 2 through 4

Hand Processed Changes

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Approved: ***Signature on File*** _____
Collider-Accelerator Department Chairman — Date

R. Karol

2.30 Monitoring, Controlling and Minimizing Unnecessary Power Consumption by C-A Accelerators

1. Purpose

This procedure provides guidance to C-A operating personnel (MCR, CCR, Experiments, etc.) in order to monitor and control power consumption, and to minimize unnecessary electric power consumption.

It is noted that total electric power consumption is a significant environmental aspect for the C-A Department. The purpose of this procedure is to help reduce the environmental impact of unnecessary power consumption through implementation of technologically, financially and operationally feasible improvements, and to implement operational controls where applicable.

2. Responsibilities

2.1 The MCR Group Leader shall provide guidance to the MCR on what major loads shall be turned off when they are no longer needed for safety, equipment protection or programmatic reasons.

2.2 The Cryogenic Systems Group Leader shall provide guidance to the Cryogenic Group regarding major refrigeration systems to be turned off when no longer needed for safety, equipment protection or programmatic reasons.

2.3 The C-A Department Chair appoints an individual to the BNL Electric Demand Coordination Committee, which is chaired by an individual from Plant Engineering. The Committee is charged to reduce overall BNL electric demand and costs by coordinating the schedule of high demand facilities (i.e. Accelerators at C-A).

2.4 C-A employees shall make every effort to turn off any unnecessary C-A equipment that can safely be de-energized in order to reduce the unwarranted use of electric power.

2.5 The overall responsibility for tracking BNL power use, planning future use and negotiating appropriate NYPA power limits rests with BNL Plant Engineering

2.6 The C-A Administrative Group monitors the C-A daily power usage. Weekly reports are sent to the ES&F Division Head, and C-A Department Chair.

2.7 During C-A operating periods, the Operations Coordinator (OC) is responsible for reducing energy consumption when the instantaneous demand equals the NYPA power limit.

3. Prerequisites

None

4. Precautions

4.1 No equipment or components shall be de-energized if it can adversely affect worker or environmental safety or equipment protection.

5. Procedure

Monitoring and Controlling Power Consumption

5.1 BNL power is monitored in the MCR when the Collider-Accelerator Complex is operating.

5.2 Each month the C-A Scheduling Physicist, in consultation with the ES&F Division Head and/or C-A Department Chair determines the C-A electric power limit for that month.

5.3 If the monthly BNL limit is reached, the following actions shall be implemented.

5.3.1 MCR Operations Coordinator shall reduce C-A power demands in accordance with an agreed upon load shedding priority list provided by the Scheduling Physicist.

5.3.2 MCR contacts the BNL Site Supervisor to determine if electric loads outside C-A can be reduced. Efforts shall be made to determine the source of the excessive power usage.

5.3.3 The OC shall seek further guidance from the Scheduling Physicist, (or C-A ES&F Division Head, or C-A Department Chair, if the Scheduling Physicist is not available).

5.3.4 If the NYPA demand limit is exceeded, the OC shall inform the ES&F Division Head or the Scheduling Physicist.

Note:
The current guidance is to allow the power level to increase no more than 2MW above the preset limit if the Accelerator/Collider program would be adversely affected. Depending upon the cause of the power demand increase and the time of the month, the Operations Coordinator shall determine the need for a temporary program interruption in order to conserve power.

Caution:
The NYPA power demand limit shall not be exceeded without C-A Department Chairperson approval.

Shedding Unnecessary Electric Loads

5.3.4 The following major C-A loads shall be turned off as soon as possible by the MCR, or the appropriate C-A Group, to reduce power demand when the experimental program run is terminated, and the systems/components are no longer needed for safety, testing, equipment testing, and/or maintenance.

5.3.4.1.1 AGS Main Magnet Power Supply
5.3.4.1.2 Booster Main Magnet Power Supply
5.3.4.1.3 RHIC Magnet Power Supplies
5.3.4.1.4 AtR bend Magnet (8, 20 and 90 degree) Power Supplies
5.3.4.1.5 Water Systems (including pumps and cooling tower fans)
5.3.4.1.6 Experimental Magnets and Spectrometers
5.3.4.1.7 Refrigeration Systems (g-2, RHIC, etc.)
5.3.4.1.8 NSRL Beam Line and Components

Implementing Technologically, Financially and Operationally Feasible Improvements

5.4 Each year the C-A Department Environmental Compliance Representative shall review electric power usage, and where applicable suggest new engineered controls or standard operating procedures to C-A Management.

5.4.1 Procedures and electric power monitoring systems shall be reviewed.

6. Documentation

None

7. References

None

8. Attachments

None