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C-A OPERATIONS PROCEDURES MANUAL

2.27 Release of New and Modified Equipment/Systems to Operations

Text Pages 2 through 4

Attachment

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

P. Sampson

2.27 Release of New and Modified Equipment/Systems to Operations

1. Purpose

- 1.1 To certify that new and significantly modified Accelerator Systems have been reviewed by the appropriate safety committees.
- 1.2 To ensure that Operations (MCR), and Collider-Accelerator Support (CAS), personnel have been familiarized with safety and operational aspects of the system.
- 1.3 Existing systems which are modified are not exempt from this procedure.

2. Responsibilities

- 2.1 The Main Control Room Group Leader (MCRGL), or designee, is responsible for initiating this procedure for new and modified systems.
 - 2.1.1 MCRGL shall initiate this procedure if:
 - 2.1.1.1 Failure of the system can have a negative effect on the health and safety of workers or the environment.
 - 2.1.1.2 Failure can result in one hour or more of accelerator downtime.
 - 2.1.1.3 Failure can cause damages in excess of \$100,000.
 - 2.1.1.4 MCR or CAS are expected to routinely operate and interact with equipment/system.
- 2.2 Each of the individuals listed in [C-A OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#), are responsible for ensuring that the steps called out for in that attachment are completed.
- 2.3 The Chief Electrical Engineer (CEE), and the Chief Mechanical Engineer (CME), will advise engineers under their supervision of this procedure.

3. Prerequisites

- 3.1 The ESSHQ Division Head (ESSHQDH), shall review the system and determine which safety reviews shall be completed prior to release.

4. Precautions

None

5. Procedure

- 5.1 The System Expert (SE) shall complete Section I, II and III of [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#) if any of items 2.1.1.1, 2.1.1.2, or 2.1.1.3, apply, else Section II and III shall be completed. This is important so that the MCR and CAS are aware of the safety and operational issues associated with the new or modified equipment.
- 5.1.1 The System Expert shall develop a familiarization or training program, for the MCR and CAS, in concert with the MCRGL and CAS Technical Supervisor (CASTS). This shall be done in a timely manner so the watch standers can safely perform what is expected.
- 5.1.2 When requested by the MCR or CAS, this information shall include written normal, abnormal and emergency procedures, guidelines and/or diagrams. Table 1 is a more complete list of information that the MCR or CAS may require.
- 5.1.3 MCR and CAS shall be given written information for normal, abnormal, and emergency conditions of equipment/system. This should include any guidelines or diagrams which will aid in the safe operation of equipment/system. Table 1 is a more complete list of information that the MCR and CAS may require.
- 5.2 ESSHQ Division Head (ESHQDH), shall determine which safety committees need to review the new or modified equipment/system, and document the required reviews on the appropriate section of [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#).
- 5.3 The CASTS shall complete and initial appropriate sections of [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#).
- 5.3.1 CASTS shall ensure that a minimum number of support technicians have been made familiar with the system and that a program to train all remaining personnel is implemented.
- 5.4 The Mechanical Services Technical Supervisor (MSTS), and/or the Water Systems Technical Supervisor (WSTS), shall complete and initial appropriate sections of [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#).
- 5.5 The Controls Group Leader (CGL), shall complete and initial the appropriate section of [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#).
- 5.6 The Maintenance Group Leader (MGL) or designee, shall ensure that CAS and MCR personnel have been trained in the changes in AGS and/or Booster LOTO procedures, and complete all appropriate sections of [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#).

- 5.7 The Chief Electrical Engineer (CEE), shall confirm that any One Line Diagrams that needed to be changed have been updated, and approves them and initials the appropriate section of [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#).
- 5.8 [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#), shall be completed, or a plan approved by the MCRGL and the CASTS is in place, to ensure timely completion of the checklist before a system can be used by MCR Operations or Operations Support.

6. Documentation

- 6.1 Completed [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#).
- 6.2 A binder containing completed checklists - [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#), will be maintained in the MCR. Minimum retention of these documents is for the current FY Run.

7. References

None

8. Attachments

- 8.1 Table 1 – Guidance to System Experts for Training and Familiarization of Operators on New and Modified Equipment/Systems.
- 8.2 [C-A-OPM-ATT 2.27.a “Operations Acceptance of New and Modified Equipment/Systems Checklist”](#).

Table 1 to C-A-OPM-2.27

Guidance to System Experts for Training and Familiarization of Operators on New and Modified Equipment/Systems

In order to insure that operating staff is knowledgeable of the safety, operational and emergency response associated with new and modified equipment/systems, the following items should be considered when a system expert is developing a training/familiarization program. *Discussions with the MCRGL and CASTS or designees should be held to come to agreement as to the appropriate level of knowledge and presentation methods needed to properly convey the required information.* The need for written procedures needs input from the operating staff. The operating staff is responsible to operate the equipment/systems at all times. The effort spent in developing these procedures can pay off many times depending upon the complexity and potential operational, safety and environmental aspects of the equipment/system.

1. System layout. Consider the need for electrical, mechanical or logic diagrams to aid in operations or troubleshooting activities. If requested by operations, label valves, place a diagram in the area of the equipment, generate checklists for operators, place maintenance logs near equipment, etc.
2. A good system walkthrough is very valuable.
3. Support systems for the equipment/system. Examples of support systems include instrumentation, ventilation, chilled water, cooling water, electrical power, batteries, UPS, inverters, backup generators, air conditioning, compressed gases, fire protection and suppression, steam, etc.
4. Hazards to workers or the environment, including required PPE.
5. Accelerator Safety Envelope requirements documented in the C-A OPM.
6. Sweep procedures.
7. Access Controls System (ACS) or Particle Accelerator Safety System (PASS) logic and interlocks.
8. Issues related to actual or potential radioactivity, contamination or airborne issues.
9. The basis for any set points, alarms or automatic actions, interlocks, or trips.
10. Routine system parameters i.e. flow rate, pressure, water level, valve positions, voltage, current, room area temperatures, etc.
11. Operating procedures.
12. Alarm response procedures.
13. Preventive and corrective maintenance requirements and procedures. Trouble shooting techniques.
14. Emergency actions and procedures.
15. Power supplies and details
16. LOTO or Kirk-key procedures.
17. Reset procedures.
18. Startup and shutdown procedures.
19. Contact personnel and call in list.
20. Conditions which require the System Experts to be contacted for assistance.
21. Pet pages and TAPE sequences have been created or updated to reflect new and modified equipment/systems.