

AugerPrime
Surface Detector Electronics Upgrade
OPERATIONS READINESS REVIEW
Charges to the Review Committee

Review to be started on:

April 14th 2024

(version: 20240403)

Review Committee Members
<i>Julian Rautenberg (chair)</i>
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Objective:

The Auger Project Management Plan defines the objective of the Operations Readiness Review as:

A subsystem only becomes part of the operation of the Observatory when it has passed an Operations Readiness Review. This review ensures that the subsystem is in effective, stable operation, all documentation has been filed, spares are available and the staff has been trained.

The purpose of the review is to determine if the SDEU subsystems is ready to be included in the operation of the observatory for science production. Additionally, the review committee should asses if all the necessary material needed for operation and maintenance are existing and available.

Detailed frame of the Review:

- Upgraded Unified Board, both electronics and mechanics parts, including attachments. All electrical connections (power, signals, slow-control, interfaces, GPS antenna and grounding) and cable protections;
- Upgraded Unified Board software and firmware, especially the interface with the CDAS and the trigger capabilities.
- Small PMT and base, HV module, all electrical connections (power, signal and grounding) and cable protection. Mechanical assembly, attachment and stabilization parts;

The review should assess, but not be limited to, the following issues:

Equipment availability and readiness

- Are components fully commissioned, operating reliably, and meeting performance requirements?
- Are the software and firmware actually available, operating reliably, and meeting performance requirements for physics?
- Are all the hardware, power and software interfaces fully functional, compatible and operational?
- Are special tools and testing equipment required for routine maintenance present and available to the Observatory staff?
- Is there a long-term plan for component repairs or replacement?
- Is the most common failures are yet known, understood and have a mitigation plan?
- Has a reliable source for all spare parts, tools, and consumables been identified for future procurements? Are spares available on site as required?

Technical Documentation

- Are drawings, schematics, and any other relevant documents complete and posted to CERN EDMS and/or PMS and GIT?
- Are instructions for operating and maintaining software code, as well as the code itself, available and organized?
- Is a complete list of equipment and components including part numbers and vendor contact information available?

Procedures. The following procedures must be complete:

- General operation.
- Hardware and software setting up, troubleshooting and maintenance.
- Process for handling major repairs.
- Inclusion of safety considerations in all procedures.

Training.

- Has an appropriate number of observatory personnel been trained to operate and provide routine maintenance, hardware and software?

Operations charge.

- Evaluate the annual charge (person-power & costs) to the Observatory of routine operation and maintenance for each subsystem, including materials, equipment. Discuss anticipated rates of failures and frequency of repairs and replacements.