

DSG-R&D Phoebus Meeting Minutes

Date: September 01, 2023

Time: 2:00 PM – 2:20 PM

Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, and Marc McMullen

1. Development of EIC DIRC Phoebus alarm system test

Peter Bonneau and Tyler Lemon

1. The Phoebus alarm system will monitor the status of the EIC DIRC interlock PCB
 - Reviewed readout hardware for test
 - NI cRIO hardware will be used to read out the interlock PCB
 - Hardware has been ordered and is expected on, or before, October 20
 - The cRIO and modules will be mounted in a portable NI chassis with power supply
 - Phoebus development computer for DIRC test
 - A laptop is being configured as a Phoebus development workstation
 - Received SSD for Linux laptop build
 - Connection from EIC DIRC to Phoebus alarm system
 - A connector will be added on the interlock enclosure for the signal readout by the alarm system cRIO

2. Phoebus alarm system test with NPS detector signal simulator

Peter Bonneau

1. Phoebus alarm system stability test in progress
 - The system has exhibited unstable operation at times
 - [DSG Note 2023-06](#), [DSG Note 2023-03](#)
 - Corruption in Phoebus files was suspected, possibly due to computer disk
 - On a new computer system, an extended test is being run to check system stability
 - NPS detector signal simulator softIOC generates EPICS PVs
 - [DSG Note 2023-32](#), [DSG Note 2023-23](#)
 - The softIOC generates 148 simulated signal PVs at 1 Hz
 - Phoebus alarm system monitors EPICS PVs
 - Alarm system reports on PVs that are in an EPICS alarm state
 - System has run without errors for 20 days as of 08/31/2023
 - Alarm system correctly reported the PVs that were configured to generate alarms
 - Phoebus alarm table, alarm tree, and alarm area panel working correctly

Activities org.phoebus.ui.application.PhoebusApplication Aug 31 10:38 AM CS-Studio

File Applications Window Help

Hall-C-NPS Alarm Area Panel

front CZ temps alarm test x back CZ temps alarm test x detector frame alarm test x hall alarm test x electronics zone alarm test x CZ Cooling Circuit Temperature Alarm Testing [°C] x chiller coolar

2023-08-31 10:38:35

Back Crystal Zone Temperature Sensor Alarm Testing [°C]

PV name	Crystal	read	HIHI set	HIHI read	HIGH set	HIGH read	LOW set	LOW read	LOLO set	LOLO read	Alarm status	Alarm severity	Scan rate	range [°C]	Min T [°C]	Max T [°C]
hcnp5_intlk_cz_t_back	0	18.83	23.00	23.00	22.99	22.99	14.99	14.99	15.00	15.00	NO_ALARM	NO_ALARM	1 second	8	15	23.00
	5	17.20	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	10	18.61	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	15	17.60	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	20	19.45	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	25	19.42	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	30	19.94	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	35	17.07	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	180	19.55	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	185	19.59	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	190	16.75	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	195	19.61	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00
	200	18.04	23.00	23.00	20.00	20.00	5.00	5.00	0.00	0.00	NO_ALARM	NO_ALARM	1 second	5	15	20.00

Hall-C-NPS Alarm Tree

- Hall-C-NPS
 - Crystal Zone Back Temperatures
 - Crystal Zone Chiller Coolant
 - Crystal Zone Cooling Temperatures
 - Crystal Zone Front Temperatures
 - Detector Frame Dew Points
 - Detector Frame Humidity
 - Detector Frame Temperatures
 - Electronics Zone Chiller Coolant
 - Electronics Zone Temperatures
 - Hall Dew Points
 - Hall Humidity
 - Hall Temperatures

Hall-C-NPS Alarm Table X

Active Alarms: 112 Hall-C-NPS

PV	Description	Alarm Severity	Alarm Status	Alarm Time	Alarm Value	PV Severity	PV Status
hcnp5_intlk_cz_t_back_1	Crystal Zone Back Temperature 1	MAJOR	LOLO_ALARM	2023-08-18 22:08:05.044	15.0	OK	NO_ALARM
hcnp5_intlk_cz_t_back_2	Crystal Zone Back Temperature 2	MINOR	HIGH_ALARM	2023-08-18 17:23:17.044	20.0	OK	NO_ALARM
hcnp5_intlk_cz_t_back_3	Crystal Zone Back Temperature 3	MINOR	HIGH_ALARM	2023-08-19 02:11:16.044	20.0	OK	NO_ALARM
hcnp5_intlk_cz_t_back_4	Crystal Zone Back Temperature 4	MINOR	HIGH_ALARM	2023-08-18 16:46:59.044	20.0	OK	NO_ALARM
hcnp5_intlk_cz_t_back_5	Crystal Zone Back Temperature 5	MINOR	HIGH_ALARM	2023-08-18 16:33:47.044	20.0	OK	NO_ALARM
hcnp5_intlk_cz_t_back_6	Crystal Zone Back Temperature 6	MINOR	HIGH_ALARM	2023-08-19 01:38:16.044	20.0	OK	NO_ALARM

Acknowledged Alarms: 0

PV	Description	Alarm Severity	Alarm Status	Alarm Time	Alarm Value	PV Severity	PV Status
No acknowledged alarms							

bonneau

Phoebus alarm system stability test – detector simulator control and monitoring, NPS alarm table, alarm tree, and alarm area panel nodes