#### DSG-R&D Phoebus Meeting Minutes

## Date: July 21, 2023 Time: 2:00 PM – 2:45 PM

<u>Attendees</u>: Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, Tyler Lemon, and Marc McMullen

# 1. <u>Alarm system test station development</u>

## Peter Bonneau

- 1. Discussed programming of nodes into the Phoebus alarm test station
  - Nodes are used to organize EPICS PVs into user-selected groups
  - Nodes are programmed into the Phoebus alarm server
  - The Phoebus Alarm Area Panel shows the combined status of PVs within a node
    - If any PV within a node goes into the HIHI or LOLO alarm state, the node panel shows red
    - If any PV with a node goes into the HIGH or LO alarm state, the node panel shows yellow
    - If no PV within a node is in an alarm state, the node panel shows green
  - Nodes can be used to execute some commands on all PVs within a node
    - E.g., alarm acknowledge, disable/enable alarms, go to a common user screen, give common alarm guidance, and automated actions (email)
    - Nodes cannot be used to set a common alarm delay, timed disable, or change annunciation settings
  - Reviewed the 12 NPS alarm nodes that have been programmed
    - Crystal zone temperature: front and back
    - Detector frame: temperatures, humidity, and dew points
    - Hall: temperatures, humidity, and dew points
    - Electronics zone: temperatures, chiller coolant
    - Crystal zone: temperatures, chiller coolant

Hall-C-NPS Alarm Area Panel								10	6.16	23.00	23
Crystal Zone Back Temperatures			Detector Frame		Electronics Zone Temperatures			15	8.52	23.00	23
	Crystal Zone Chiller Coolant	Crystal Zone Cooling Temperatures		Electronics Zone Chiller Coolant				20	7.44	23.00	23
			remperatures	Childre Cooldine				25	8.64	23.00	23
								30	7.67	23.00	23
			Hall Dew Points	Hall Humidity	Hall Tempe	ratures		35	7.73	23.00	23
Crystal Zone Front	Detector Frame	Detector Frame						180	6.09	23.00	23
Temperatures	Dew Points	Humiaity	Hall-C-NPS Alarm Tree					185	6.92	23.00	23
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Detector Frame	Electronics Zone	Electronics Zone	Hall-C-NP3 +	-			Hall-C-NPS Alarm Table	×			
Temperatures	Chiller Coolant	Temperatures	Crystal Zone Back	Temperatures			Active Alarmer 1 Hall		DC -		
			PV: hcnps_intik_ PV: hcnps_intlk_cz	t back . CZ Back Tom	e ON	NU_ALAR	Active Alarms: 1 Hal	I-C-IN	P5 *		
	Hall Humidity	Hall Temperatures	PV: hcnps_intlk_cz	PV			E				
Hall Dew Points			PV: hcnps intlk cz	hcnps_intlk_cz_t_back_1			Crystal Z	one I			
			PV: hcnps_intlk_cz	t_back	m						
Hall-C-NPS Alarm Tree			PV: hcnps_intlk_cz_	t_back 🖶 Add Compon	ent						
Hall C NIPS		I Int	PV: hcnps_intlk_cz_	t_back 🥙 Rename Item	1						
Hall-C-IVF5	-		PV: hcnps_intlk_cz_	t_back Move Item							
Crystal Zone Back     Crystal Zone Chiller	Contemporatures		PV: hcnps_intlk_cz_	t_back 🐺 Enable Alarm	15						
Crystal Zone Chiller C     Courtal Zone Cooling	Tomporaturos		PV: hcnps_intlk_cz_	t_back 🚜 Disable Alarn	ns						
<ul> <li>Crystal Zone Front Te</li> </ul>	emperatures		PV: hcnps_intlk_cz	t back a serie	cted items		Acknowledged Alermer (	,			
Detector Frame Dew Points			PV: hcnps intlk cz t back				Acknowledged Alamis. 0				
Detector Frame Humidity			PV: hcnps_intlk_cz	PV							
Detector Frame Temperatures			PV: hcnps_intlk_cz								
Electronics Zone Chil	ller Coolant		PV: hcnps_intlk_cz_	t_backSend Email							
<ul> <li>Electronics Zone Terr</li> </ul>	nperatures		PV: hcnps_intlk_cz_	t_back_17							
Hall Dew Points			PV: hcnps_intlk_cz_	t_back_18							
Hall Humidity			PV: hcnps_intlk_cz_t_back_19								
Hall Temperatures			PV: hcnps intlk_cz	t back 20		$\rightarrow$					
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NPS Alarm Test Station Nodes & Alarm Panel Area

User Interface Menu for the Crystal Zone Temperatures Node

Hall-C-NPS Alarm Area Panel			back CZ temps alarm	test × front CZ temps alarm t	est × detecto	etector						
						File Appli	cations	Window Help				
Crystal Zone Back Temperatures Chill	Crystal Zone	Crystal Zone Cooling Temperatures	2023-07-18 09:22:34	Ba	r 🔗 🎓 🕶		8. 💾	Configure	honne intlk og t hack 1	~		
	Chiller Coolant					Hall-C-NPS A	larm Area	Panel	comgacinenps_intex_t2_t_back_r			
			PV name 0	rystal read set re	ad set				Path:	/Hall-C-NPS/Crystal Zone Ba	ck Temp	
Crystal Zone Front Dete Temperatures De	Data star Francis	Detector Frame Humidity	honne intlle og t hoek	a 7.00 00 00 00		Crystal Zor	ne Back	Crystal Zone	Description:	Crystal Zone Back Temperal	Temperature 1	
	Detector Frame		Configure Crys	×	Tempera	atures	Chiller Coolant	Behavior:	✓ Enabled ✓ Latch ✓ A	nnunciate		
	Dewronics				10			$\succ$	Disable until:		*	
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			Suidance:		0	Temperatures		Dew Points	Alarm Count [within delay]	0		
			Title	Detail	+ 10				Enabling Filter:			
					0				Guidance:			
					<b>A D</b>	Detector Frame	Frame	Electronics Zone Chiller Coolant	Title	Detail	+	
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					- 10						•	
Hall-C-NPS Alarm Tree					0	Hall Dew	Points	Hall Humidity			4	
			Jispiays:								×	
Hall-C-NPS V			Title Detail			Hall-C-NPS Alarm Tree			Displays:			
Crystal Zone Back Temperatures			CZ Back Temps Screen	/home/bonneau/controls/nj	i/controls/np		Hall-C-NDS X		Title	Detail	+	
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PV: hchps_intik_cz_t_back_3					at 🚽	U PV: hcnp	s intlk cz	t back 2				
PV: honps intlk_cz_t_back_5			Commands:			PV: hcnps_intlk_cz_t_back_3					_	
PV: hcnps intlk cz t back 6			Title Detail			PV: hcnps_intlk_cz_t_back_4			Commande			
PV: hcnps_intlk_cz_t_back_7			Title	Detail		PV: hcnps_intlk_cz_t_back_5			Tible	Title Detail		
PV: hcnps_intlk_cz_t_back_8						PV: hcnp	PV: hcnps intik cz t back 7		Ticle	Detail	-	
PV: hcnps_intlk_cz_t_back_9			bone û			PV: hcnps_intlk_cz_t_back_8		none				
PV: hcnps_intlk_cz_t_back_10			none			PV: hcnps_intlk_cz_t_back_9						
PV: hcnps_intlk_cz	_t_back_11				×	PV: hcnp	s_intlk_cz	t_back_10				
PV: hcnps_intlk_cz_t_back_12			Automated Actions:			PV: hcnps_intlk_cz_t_back_11 PV: hcnps_intlk_cz_t_back_12 PV: hcnps_intlk_cz_t_back_13			X			
PV: hcnps_intlk_cz_t_back_13			Title Detail Delay						Automated Actions:			
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Configuration Menu for the Crystal Zone Temperatures Node

Configuration Menu for a Crystal Zone Temperature PV

### 2. Debugging Phoebus Test Station Alarm Server

- 1. Discussed issues with the configuration file that loads the alarm parameter settings for each simulated detector PV when the system is first initialized
  - After the system is initialized, the alarm server stores PV alarm settings within Phoebus
  - The system correctly accepts some PVs (~60%); others are ignored
  - No errors are reported by the Phoebus alarm server console

## 3. <u>Upcoming Phoebus Development</u>

Peter Bonneau and Aaron Brown

- 1. Complete NPS detector signal simulator for alarm test station
- 2. Debug and complete integration of simulated signals into Phoebus alarm server
- 3. PV save and restore application using Phoebus (Aaron)
  - Save and restore is used to set EPICS alarm levels for the alarm test system