

Field Report on Becoming a Physics Operator

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Good progress has been made in the last year

- **April 2022: Relocation**
- **May 2022: Beam programmer**
 - Introduction 5/4 (Theresa Wilks)
 - Substitute 5/19
 - Main 6/20 –
- **October 2022: Physics operator**
 - Lecture 10/5 – 10/27* (Al Hyatt)
 - Apprentice 10/31 – 1/23
 - Second 2/1 – 2/9
 - First during startup 2/23 –

* Lecture notes 50% ready

A Guide for Physics Operators is being drafted

- **Navigation**
- **Shape**
- **Equilibrium**
- **Density**
- **Gas**
- **E coil**
- **Error field**
- **System**
- **Responsibilities**
- **Troubleshooting**
- **Nomenclature**

[https://docs.google.com/document/d/1qX9JOP38qgHyOLjnm\\$NYcbrEeduuG62NFa0XcYvy5B8/edit?usp=sharing](https://docs.google.com/document/d/1qX9JOP38qgHyOLjnm$NYcbrEeduuG62NFa0XcYvy5B8/edit?usp=sharing)

A Guide for Physics Operators

A Guide for Physics Operators

J. Yang, W. Choi, R. Maurizio, B. Victor, J. Barr, ...

Preface

This is a manual for physics operators, who will work mostly using the Plasma Control System (PCS). The PCS code was first written by John Ferron. For a detailed introduction to the PCS, see user's manual written by Mike Walker ([link](#)). The majority of this manual is based on the transcript written by Theresa Wilks during her cohort's training sessions with Al Hyatt in February 2020 ([link](#)), and is written by the cohort of October 2022.

This manual is organized as follows. In the first section, [Navigation](#), a general overview of PCS is given. The following sections illustrate each category of the PCS. The last three sections, [Physics Operator Responsibilities](#), [Troubleshooting](#) and [Nomenclature](#), act as more practical guides for physics operators.

I am also a Deputy Coordinating Physics Operator:

- **Support startup campaign**
 - Figure out tasks including tests and cleaning
 - Find target shots to use for each task
 - Perform startup experiments, check radiated power ratio and dl_p/dt
- **Schedule physics operators**
 - Assign available physics operators to experiments
 - Attached to Run Coordinators
- **Prepare training material for new physics operators**
 - Compile memos for physics operators
 - Draft a guide to physics operators and get approved by AI

Next challenge is to be reliable enough to be a 1st PO

- April 2022: Relocation
- May 2022: Beam programmer
- **October 2022: Physics operator**
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 - First during startup 2/23 –
 - **First 3/18/2024 –**
- **Next startup is in 2024**
 - From 1/22/2024 to 2/29/2024

20 Weeks Plasma Operations

FY2023 OPERATIONS SCHEDULE																													
Oct							Nov							Dec							Jan								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
						1			1	2	3	4	5							1	2	3	4	5	6	7			
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14		
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21		
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28		
23	24	25	26	27	28	29	27	28	29	30				25	26	27	28	29	30	31	29	30	31						
30	31						Counter 210							Counter 210							Counter 210								
Feb							Mar							Apr							May								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
			1	2	3	4				1	2	3	4							1							6		
5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8	7	8	9	10	11	12	13		
12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20		
19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27		
26	27	28					26	27	28	29	30	31		23	24	25	26	27	28	29	28	29	30	31					
Counter 210							Co 210							Co 210							Counter 210								
Jun							Jul							Aug							Sep								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
					1	2	3						1				1	2	3	4	5							1	2
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12	3	4	5	6	7	8	9		
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19	10	11	12	13	14	15	16		
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26	17	18	19	20	21	22	23		
25	26	27	28	29	30		23	24	25	26	27	28	29	27	28	29	30	31			24	25	26	27	28	29	30		
Hydrogen - Ctr 210							30	31																					

 Plasma Physics	 Startup	 APS	 OFF Friday	 Holiday/OWD
 Optional Physics	 Vent	 SOFE	 Beam Rotation	 NT vent
 H Plasma Physics	 0800-2000 H Physics	 0800-2000 Physics	Updated On 03/06/2023	