## Why are we removing our very good gun?



- New SRF booster eliminates warm capture cavity, and minimize RF deflection and x/y coupling
- New SRF booster requires beam energy of 200keV, so we need to upgrade the high voltage chamber to reliably operate at 200kV





3. Temporarily test the injector to learn the operation and limitations for transporting 200keV beam, but then scale back to 130 kV for Fall operation.



## **200kV Gun conditioning at UITF : Move to CEBAF**



### Vacuum chamber

Spellman 225kV HVPS

SF6 tank for HV conditioning

## New NEG/BPM beam pipe





- 1. Design
- 2. Fabricate
- 3. Degas
- 4. Leak check (today)
- 5. NEG coat (Phil)
- 6. Acceptance test (Pete)
- 7. Gabou map (Johnj M., S&A)
- 8. Pre-align (S&A)

# ATLIS #17444 to for installation and commissiong for usual 130kV operation

#### Installation

- IN=> move HV chamber and a 225kV HVPS from UITF to CEBAF
- OUT=> move old HV chamber and an optics table from CEBAF to Test Lab (room TBD)

### Survey & Alignment

- Pre-installation :
  - As-found (HV, PREP, TABLE, MFH2I01, TUBE)
  - Pre-assembly (NEG/BPM tube)
- HV Chamber :
  - Initially, test w/laser retro-reflection from photocathode and HV as-found, then align if needed
  - HV chamber is nearly 1:1 mechanically, so very close X/Y (roll)
- NEG/BPM tube :
  - => Solenoid (X/Y/PITCH/YAW)
  - BPM (ROLL, then X/Y/PITCH/YAW)

### **Instrumentation and Controls**

• Connect and calibrate two new BPM's (IPM2I01, IPM2I02), coordinate with software for screens, save/restore, archiving

		Sun	Μ	Т	w	Т	F	Sat
26		2017-06-25	(26)	27	28	29	30	01
	Owl	PD: Allison	PD: Allison	PD: Allison	PD: Kumar	PD: Kumar	PD: Kumar	PD: Kumar
	Day		Cold Box cleanup INJ: cathode re- DC: Cooling Mos <sup>eff</sup> MARC3A load to	Cold Box IId on SL ice remvl FC1 INJ setur DC: Cooling	Cold Box cleanup INJ BP Lifetime DC: Cooling Mods	Cold Box cleanup INJ BP Lifetime DC: Cooling Mods	Cold Box cleanup SL ice remvl INJ BP Lifetime DC: Cooling Mods	
			<ul> <li>2kW dump c</li> <li><b>RF Maint. start</b></li> <li>Press swtch cbles</li> <li>XA PSS PLC Upgrade</li> </ul>	<ul> <li>a 2kW dum</li> <li>a 1L13 VBV</li> <li>a RF PM</li> <li>a Press swtch cbles</li> <li>a XA PSS PLC Upgrade</li> </ul>	e 2kW dump cntr e 1L13 warm gir e RF PM e XA PSS PLC Upgrade	Studies         The PM         XA PSS PLC Upgrade	© 2k Gun as found? © 1L © RF PM © XA PSS PLC Upgrade	
	Swing				INJ BP Lifetime	INJ BP Lifetime	INJ BP Lifetime	
27		2017-07-02	03	04	05	06	07	08
	Owl	PD: Kumar	PD: Kumar	PD: Kumar	PD: Kumar	PD: Kumar	PD: Kumar	PD: Kumar
	Day		SC1 cooldown	SC1 cooldown	SC1 cooldown SL ice remvi	SC1 cooldown	SC1 cooldown SL ice remvl	Phone Upgrade
			Gun 2 Inst a INJ HV interick CAMAC to VME a I to V to VME	Holiday	Inst         Inst <t< td=""><td>Gun 2 Inst # INJ HV interlok CAMAC to VME</td><td>Gun 2 Inst <sup>™</sup> INJ HV interlck CAMAC to VME</td><td></td></t<>	Gun 2 Inst # INJ HV interlok CAMAC to VME	Gun 2 Inst <sup>™</sup> INJ HV interlck CAMAC to VME	
			© 2kW d DC: PM d SSG: PM © XA PSS FLO Opgrade Tour: Public Tour: Public	y weekend: ned work	2 KW dur DC: PM & e IHA3C/3 SSG: PM A	mplete pre-installatio embly, LOTO, move H	on jobs V chamber/HVPS)	
Ī	Swing							
28		2017-07-09	10	11	12	13	14	15
	Owl	PD: Kumar	PD: Kumar	PD: Kumar	PD: Keesee	PD: Keesee	PD: Keesee	PD: Keesee
ĺ	Day		9 1/4" U-Tubes Gun Bake	9 1/4" U-Tubes Gun Bake	Gun Bake	CM cooldns Gun Bake	CM cooldns Gun Bake	
		Vacuum work w/ S&A, pump down and bake out Vacuum work w/ S&A, pump down and bake out (we will have 200keV Toolbox meeting this week to discuss planned jobs, ac SG: PM						
				a XA PSS PLC Upgrade		2 XA PSS PLC Upgrade		
	Swing							
29		2017-07-16	17	18	19	20	21	22
	Owl	PD: Keesee	PD: Keesee	PD: Keesee	PD: Keesee	PD: Keesee	PD: Keesee	PD: Keesee
	Day		CM cooldns	CM cooldns	CM cooldns	CM cooldns	CM cooldns	
		Со	oldown, leak check, f	inal alignment	HVPS HI Pot e INJ HV I e I IN V IO RF PM A XA BSS BLC Linguide	perate at 130kV w/ G	alassman HVPS	
·	Swine		~ ATTO FLO OPHIAUE	~ ATTO FLO OPHIAUE				
	Swing							