Run 20 RHIC Machine/Experiments Meeting

January 28, 2020

Agenda:

General discussion of Run 20 & Scenario for discussion - W. Christie

Collider Update - C. Liu

LEReC Update - A. Fedotov

STAR Status/update - J.H. Lee

All Other Business (AOB)

BLUEJEANS CONNECTION INFO:

To join the meeting on a computer or mobile phone: https://bluejeans.com/273705843/1875?src=calendarLink

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+1.408.317.9253 (US (Primary, San Jose))

Global Numbers: http://bluejeans.com/numbers

Meeting ID: 273 705 843

RHIC Run FY20 Run Schedule (Revision date: 12/10/19) Calendar 2019 Calendar 2020 **Program Element** Sept Oct Nov Dec Jan Feb Mar April May July June RHIC Cryo warm scrub starts October 7th RHIC Cryo 45 K cool down (Nov 4th – Dec 1st) 50000 Warm up Dec 7th une 15-16 RHIC Cryo 4.5 K cool down starts December 2nd RHIC Cryo off June 17th EBIS Startup Sept 3rd, Booster Startup Sept 16th, AGS Startup Nov 11th LEReC ready on Feb 29th, 4 wks 7.7 GeV/n TBD RHIC setup/commissioning (12/5 – 12/10) RHIC physics $\sqrt{s} = 11.5 \text{ GeV/n AuAu} (12/10 - 12/10)$ Dec 10th 2/23, no LEReC, 2 days 3.5 GeV FXT on TBD) RHIC physics $\sqrt{s} = 9.2 \text{ GeV/n AuAu} (2/29 - 5/31,$ LEReC, 3.2 GeV FXT done in Run-19) RHIC physics for five more FXT energies AuAu and one week CeC (6/1 - 6/15) NSRL Operations (Sept 23rd - June 15th) LINAC (Setup Dec 19th, Beam Dec 26th) BLIP Isotopes (Dec 26th - June 15th) Tandem Operations (Sept 23rd – Feb 23rd)

N.B. With the FY2020 budget final, RHIC Run 2020 will be 28 Cryo weeks long, as presented above.

The actual transition date between 11.5 and 9.2 GeV Physics running will be a matter of discussion as the run progresses.

It is likely that STAR will request to start/run the Fixed target sometime in mid to late January.

Summary of interleaving LEReC Commissioning with the STAR Physics running

Meeting held on December 17, 2018 to discuss Strategy/plan:

- Once collisions available, Spend the first about week getting STAR tuned up and the Physics running going.
- After this first week of running, start interleaving LEReC commissioning
 - Idea discussed to schedule for 12 hours every other day (e.g. M, W, F)
 - Keep schedule "flexible" so that if for any reason LEReC can't effective use the time it switched back to Physics running.
 - Also so that if LEReC is making good progress, and more time is desirable, the allotted time can be extended.

This is a Strategy/plan to get started on this sharing of the Collider time. Expectation is that once we see how this works we'll discuss if we need any modifications.

Rough accounting of LEReC hours per week (Run 20) and planned for this week:

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12/10 - 12/16: ~20 hrs LEReC
12/17 - 12/23: 28 hrs LEReC
12/24 - 12/30: 0 hrs LEReC
12/31 - 1/6: ~24 hrs LEReC
1/7 - 1/13: ~31 hrs LEReC
1/14 - 1/20: ~33 hrs LEReC
1/21 - 1/27: ~32 hrs LEReC
1/28 - 2/3: ~38 hrs LEReC
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Total LEReC ~ 206 hrs (~ 8.6 days)

Key:

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Blue = as run
Red = planned
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STAR Beam Use Request for Run20

					"Good	,,
	Beam Energy	$\sqrt{s_{NN}}$ (GeV)	$\mu_{\rm B} \; ({\rm MeV})$	Run Time	Number Ev	vents
	(GeV/nucleon)	,			requested a	collected
	9.8	19.6	205	4.5 weeks	400M	582M
_	7.3	4.5ac.mas	260	5.5 weeks	300M	324M
Run20	5.75	11.5	315	9.5 weeks	230M	
Kunzo	4.55	9.1	370	9.5 weeks	160M	
	3.85	7.7	420	12 weeks	100M	
	31.2	7.7 (FXT)	420	2 days	100M	51M
	19.5	6.2 (FXT)	487	2 days	100M	
Run20	13.5	5.2 (FXT)	541	2 days	100M	
rtuii20	9.8	4.5 (FXT)	589	2 days	100M	
	7.3	3.9 (FXT)	633	2 days	100M	53M
	5.75	3.5 (FXT)	666	2 days	100M	
	4.55	3.2 (FXT)	699	2 days	100M	201M
	3.85	3.0 (FXT)	721	2 days	100M	3.7M+

- Top priority for Run20 is measuring next two energies in BES-II at $\sqrt{s_{NN}}$ = 11.5 GeV and 9.2 GeV
- Finishing **fixed target** measurements at $\sqrt{s_{NN}}$ = 3.5, 3.9, 4.5, 5.2, 6.2, 7.7 GeV

STAR's plan is to accumulate 100 Mevts this year for each of the 6 FXT energies. Rough estimate of STAR running time needed per Energy is ~ 16.5 hrs.

- assumes average HLT good rate of 1700 Hz

All Other Business (AOB)