

Hall A Update

Andrew Puckett

Hall A Run Coordinator

12/15/2022

Massive HV trip

Lognumber **4101677**. Submitted by **a-onl** on **Wed, 12/14/2022 - 16:44**.

Last updated on Wed, 12/14/2022 - 16:44

Logbooks: **HALOG BIGBITE SUPERBIGBITE**

Entry Makers: **ole**

Multiple cannels tripped a few minutes into run 3250.

snapshot_1

File Action View Setup Help

R R HALL_A <---T- (0,0,19,0,783)

R R BB Detector High Voltage <---T- (0,0,19,0,486)

BB Hodoscope Left <----->

BB Hodoscope Right <----->

BB Hodoscope Primary Channels <----->

R R BB UVA GEM <---T- (0,0,14,0,1)

BB Preshower <----->

BB Shower <----->

R BB Grinch <-----> (0,0,5,0,62)

SBS Detector High Voltage <---T-

SBS HCAL Right <----->

SBS HCAL Left <----->

SBS GEM <---T-

MOLLER <---T-

DAQ <---T-

R R uva_uvgem_0_Drft 96/0/06 P <-----> <LOLO,MAJOR>,<MAJOR>

R R uva_uvgem_0_G1 96/0/05 P <-----> <LOLO,MAJOR>,<MAJOR>

R R uva_uvgem_0_G2 96/0/03 P <-----> <LOLO,MAJOR>,<MAJOR>

R R uva_uvgem_0_G3 96/0/01 P <-----> <LOLO,MAJOR>,<MAJOR>

uva_uvgem_0_Ind 96/0/00 P <-----> <LOLO,MAJOR>

uva_uvgem_0_Tr1 96/0/04 P <-----> <LOLO,MAJOR>

uva_uvgem_0_Tr2 96/0/02 P <-----> <LOLO,MAJOR>

uva_uvgem_1 91/0/01 P <-----> <LOLO,MAJOR>

uva_uvgem_2 95/0/00 P <-----> <LOLO,MAJOR>

uva_uvgem_3 95/0/01 P <-----> <LOLO,MAJOR>

uva_xygem_0 91/0/04 P <-----> <LOLO,MAJOR>

uva_xygem_1 91/0/05 P <-----> <LOLO,MAJOR>

uva_xygem_2 91/0/06 P <-----> <LOLO,MAJOR>

uva_xygem_3 91/0/07 P <-----> <LOLO,MAJOR>

UVA GEM Gas Flow G P <---T-

Execution Status: Global Active

Mask <CDATL>: <Cancel,Disable,noAck,noackT,noLog> H=noAck 1hr timer

Group Alarm Counts: (ERROR,INVALID,MAJOR,MINOR,NOALARM)

Channel Alarm Data: <Status,Severity>,<Unack Severity>

Filename: main.alhConfig

Silence 30 minutes

Silence current

Silence Forever: Off

ALH Beep Severity: MAJOR

<https://logbooks.jlab.org/entry/4101677>

<https://logbooks.jlab.org/entry/4101684>

Stripcharts Indicating Target Cell "Hunter" Rupture

Lognumber **4101739**. Submitted by **adaq** on **Wed, 12/14/2022 - 18:23**.

Logbooks: HALOG BIGBITE SUPERBIGBITE

Entry Makers: hpresley

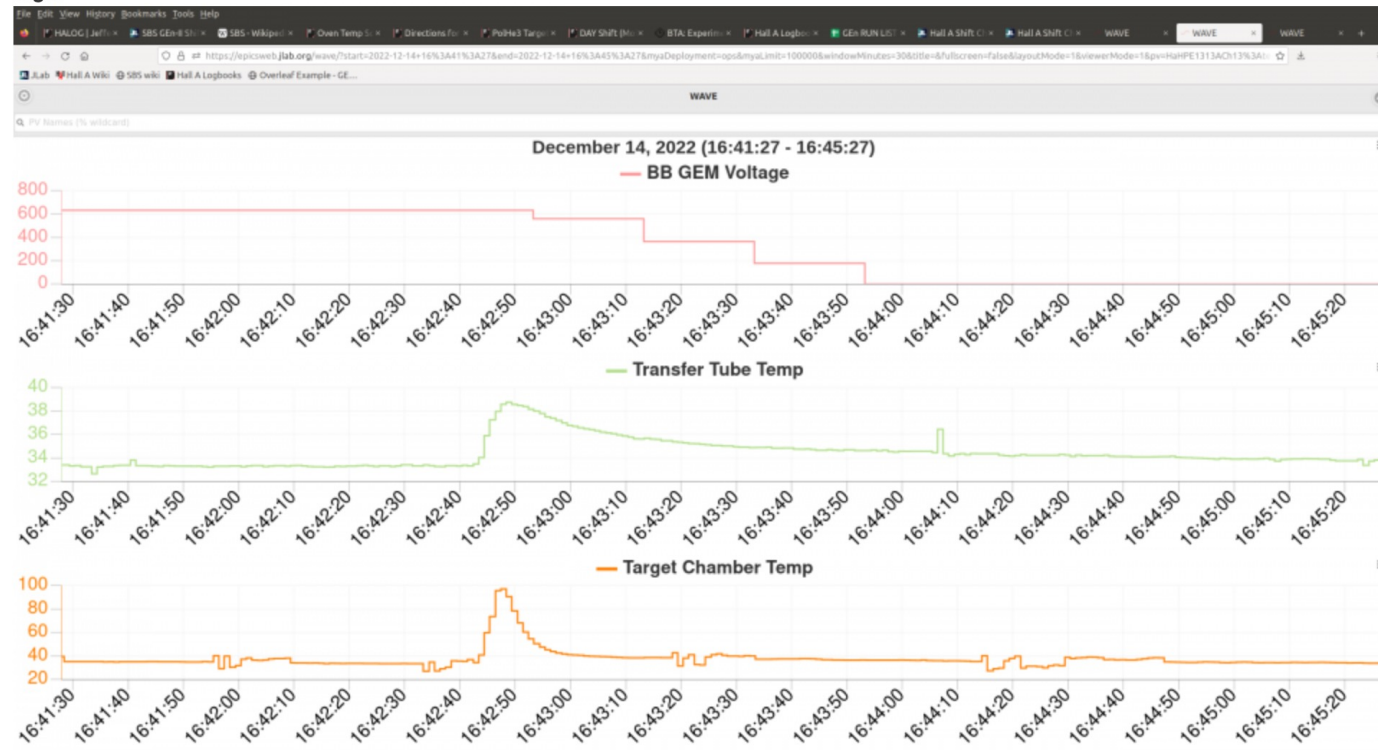
Backlinks: CABAF conditions at time of Hall A Target problem.

Stripcharts indicating "Hunter" rupture. The screenshot titled "HighV" displays BB GEM Voltage and temperatures from the target chamber and transfer tubes. At 16:42:43, the temperatures rose drastically. Shortly after there was a high voltage trip.

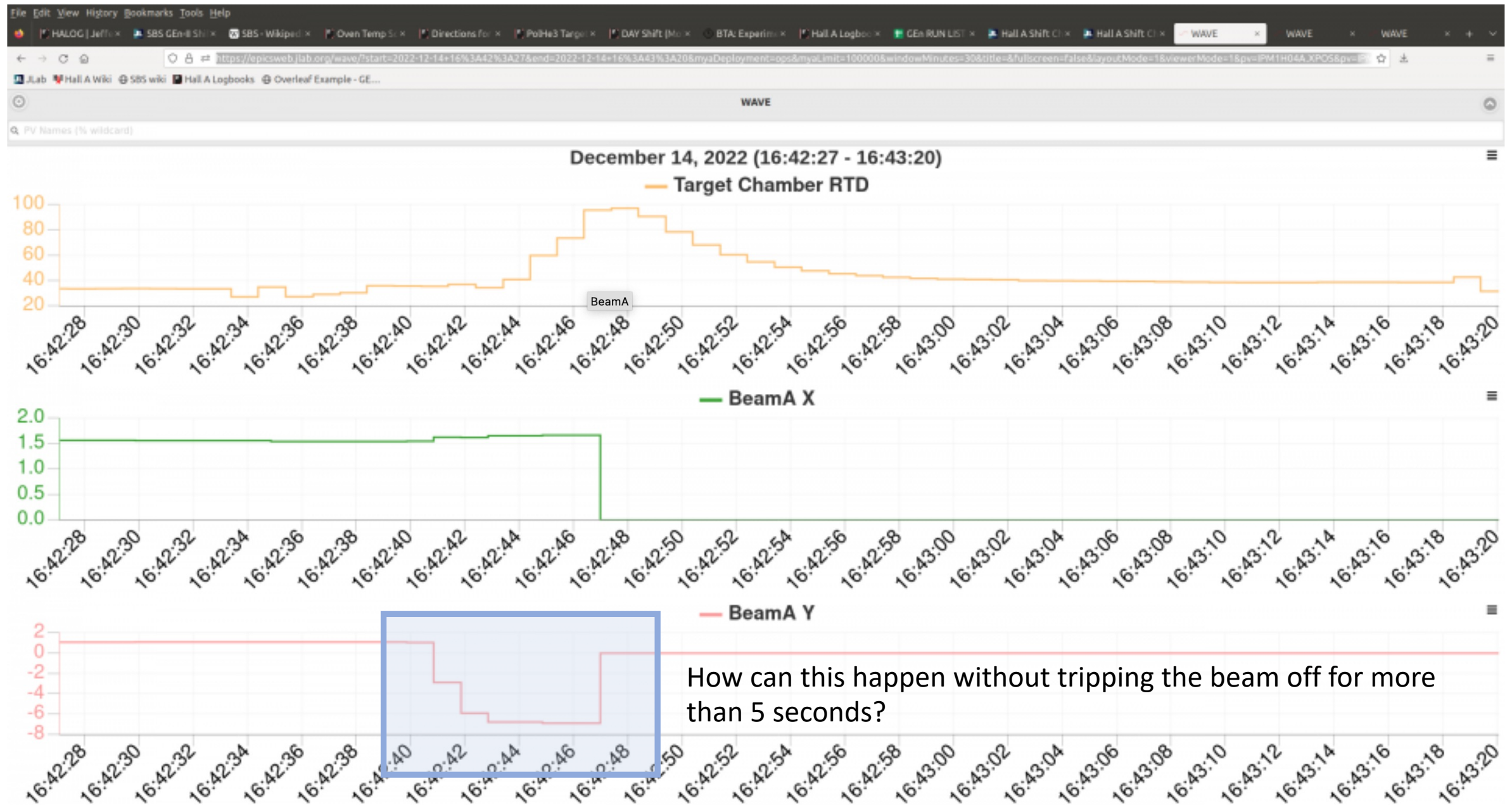
The screenshot titled "BeamA" shows BPM A as well as the target chamber temperature. BeamA Y position shows a deviation of about 7 mm 2 seconds before the temperature rose.

The screenshot titled "BeamE" also shows a deviation in the Y position.

HighV

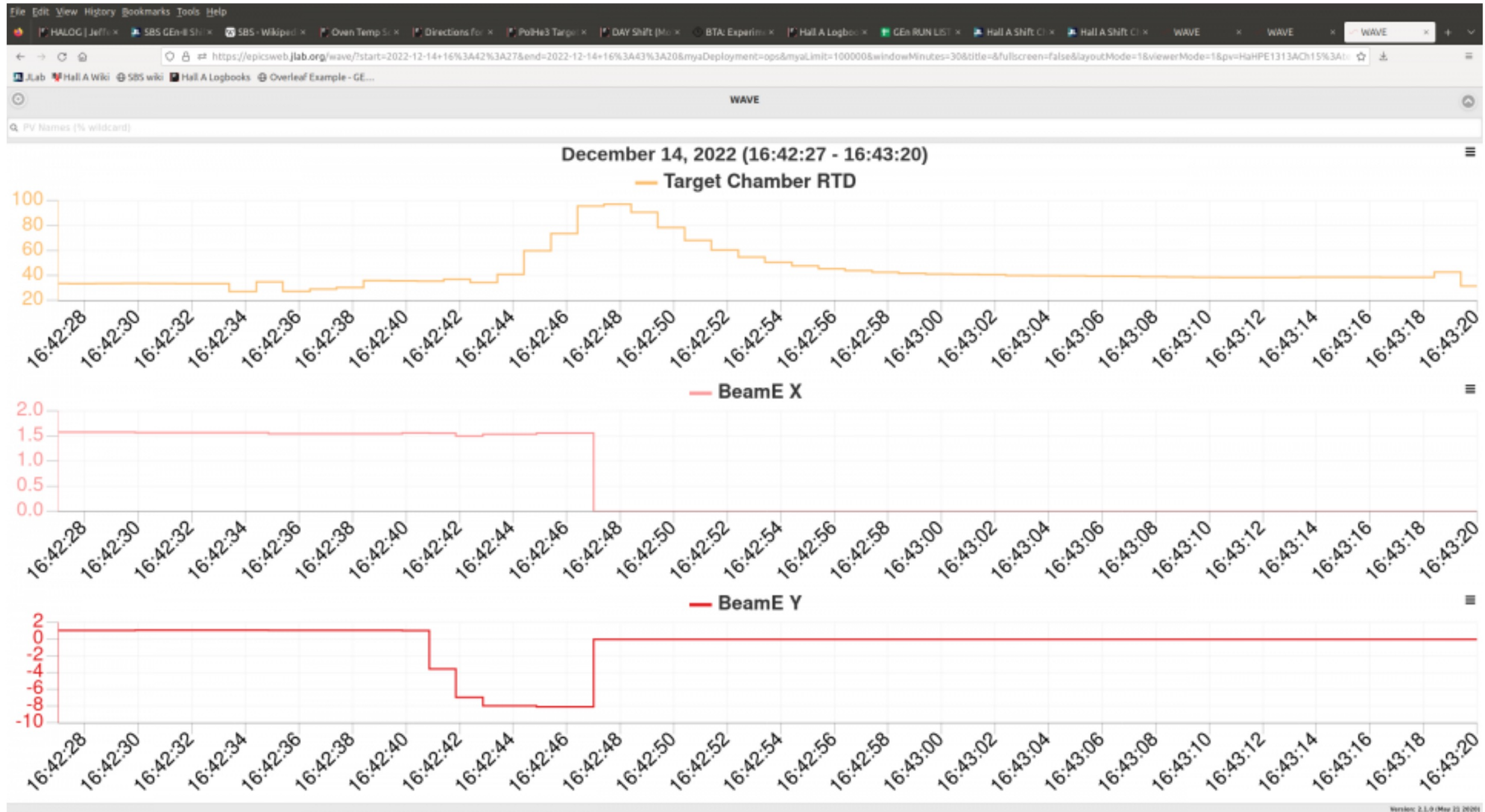


BeamA



How can this happen without tripping the beam off for more than 5 seconds?

BeamE





- It appears that orbit/BPM locks were initially not turned on when beam to Hall A was resumed a little after 16:20
- This should never have happened/been allowed to happen with a glass cell in beam
- It appears that they were turned on at around 16:35 after a trip, but were behaving weirdly until the large beam excursion event at 16:42

Comments

- Unlike the previous two cell rupture events in November, here we have a fairly strong indication of the cause... a large beam position excursion in the Y direction which caused the beam to hit things it shouldn't have, and spray enough radiation into the BigBite spectrometer to cause multiple BigBite detector HVs to trip off.
- This event seems like it was preventable and should have been prevented.
- After determining what happened, all detectors and magnets were powered down, target lasers and oven turned off, requiring an escorted access to Hall A to shut off target oven variacs
- After bringing Hall A to a stable state, swing shift crew was dismissed, today's owl and day shifts were canceled, and RC and spokespeople are assessing the path forward in terms of work to accomplish in the remaining time before the shutdown.