PASS System
Proposal Allocation Safety Scheduling

NSLS
NATIONAL SYNCHROTRON LIGHT SOURCE
home

End of Run Forms

View Notes

Form ID:	11270
Beamline Used:	3-ID
Start Date:	3/6/2018
End Date:	3/11/2018

SAF No.:	301982
Time requested this cycle:	6
Time received this cycle:	6
Name:	Stephan Hruszkewycz
Institution:	Argonne National Lab
Guest Number:	J6855
E-mail:	shrus@anl.gov

This user would like to be contacted with a status report.

1) **How satisfied were you with the fraction of the year that the facility operates?**
very satisfied
Comments:
The operation schedule meets the experimental needs of our group very well.

2) **How satisfied were you with the Beamtime scheduled (i.e., was beamtime delivered on schedule were beamtime outages kept to a minimum)?**
very satisfied
Comments:
During the beamtime, the beam was for all but a few hours during our six days, which was very good.

3) **How satisfied were you with the beam performance (i.e., was beam or service maintained close to specifications)?**
neither satisfied nor dissatisfied
Comments:
When aligned to the x-ray beam performance was exceptional. One concerning thing that I noticed however, was that after every beam dump, we had to call the control room to enable local feedback for a corrective bump to the storage ring orbit. Without it, the x-ray flux at 3-ID deteriorates steadily until the steering is so off that no photons reach the end station. There is no reason that the local bump correction feedback is not enabled automatically.

4) **How satisfied were you with the support for users provided by the NSLS-II staff?**
very dissatisfied
Comments:
This comment stems from the fact that scripts running multiple area X-Y scans of the sample with piezo motor fly scans failed due to a crash a majority of the time. This kind of script -- wherein a condition is changed within a "for" loop (e.g. sample angle), and an XY fly scan is performed to monitor changes in a given region of interest -- is essentially the sole functionality of a scanning nanoprobe beamline. Yet, during our experiments such simple loops almost always failed in entirely unpredictable ways with errors that were completely incomprehensible. Each time this happened, the

beamline waited at the current scan point with shutters open, illuminating the sample with full beam somewhere in the region of interest until the user issues a new command to rectify the situation. This was absolutely intolerable for our samples which were found to be sensitive to beam damage and needed to be scanned without dwelling long in any given area. Because of this, we measured good data for maybe ~20hrs when we were in a position to do so for more than 100hrs. The beamline staff were extremely responsive to our needs, but their understandably limited knowledge and access to the Blue Sky engine that caused the error meant that our only recourse was to log the error (which was several pages of phython tracebacks), and to start the script over again in a new region of interest while hoping that it doesn't crash. The data management group and others were notified about our errors during our beamtime. We heard no response as to how to solve the problem or how to work around it. Truthfully, this is a completely untenable situation that in our case greatly reduces the chances that our few good data sets can be published, as the two studies we budgeted time for during this beamtime are both incomplete because of this problem. I understand that it is asking too much to expect an immediate response from the programming and networking teams to such a very deep bug. However, fixing this problem at 3-ID must be a priority because without some sort of fix, the beamline is completely cut at the knees and is utterly unreliable in what should be the single most important core competency of a nanoprobe beamline that otherwise runs as well as 3-ID does.

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5) How satisfied were you with the support for users provided by the beamline staff?
very satisfied
Comments:
The staff at 3-ID were very responsive to our needs, extremely helpful, and worked very hard to try to somehow alleviate the above-mentioned problems.

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6) Which of the following benefits have resulted or will soon result from your use of this facility this year?
Created new fundamental knowledge (i.e., basic research)
Dissemination of new knowledge via publication in peer-reviewed open literature
Dissemination of new knowledge via presentations at professional society meetings
Furthered Department of Energy mission(s)
Obtained access to unique capabilities not available elsewhere (e.g., forefront experiments, one-of-a-kind instruments, distinctive materials or services)
Trained students (undergraduate, graduate or postdoctoral associate)

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7) How satisfied were you with the Safety Approval Form and the Beamline authorization processes?
satisfied

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8) How satisfied were you with the quality of general training (NSLS-II safety orientation, GERT, Stop Work) and BeamLine Operations and Safety Awareness (BLOSA)?
satisfied

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9) Are the training and safety procedures appropriate?
yes

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10) What would you like the NSLS-II to do differently in the future that would assist users (not mentioned above)?

☐ Flag this form for follow up

☐ Issue has been identified

☐ Issue has been resolved

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