



# Memo

Date: June 23, 2016  
To: Mark Breitfeller, Sushil Sharma and Ferdinand Willeke  
From: Zhong Zhong (chair), Photon Science Radiation Safety Committee  
Subject: Review of the ray-tracing design of the frontends for XFP and ESM beamlines

Dear Mark, Sushil and Ferdinand,

The Photon Science Radiation Safety Committee (RSC)'s ray-tracing subcommittee concluded review of the front-end ray-tracing of the 21-ID (ESM) and 17-BM (XFP) beamlines.

Subjects reviewed include the synchrotron max-fan and Bremsstrahlung drawings. Since the max. fan drawings are sufficient for assuring the safety of the front-end against synchrotron radiation, additional interlocked synchrotron ray-tracing, included in the drawing packages, were not reviewed by the RSC.

## Written documents

The following documents were submitted to the RSC on May 6, 2016 for review:  
For XFP

1. XFP front-end assembly drawing, SR-FE-3PW-7000, Rev. B by D. Puleo.
2. XFP front-end Bremsstrahlung ray-tracing, SR-FE-3PW-7001, Rev. B, sheets 6 and 7 for horizontal and vertical projections, respectively.
3. XFP front-end max. synchrotron ray-tracing, SR-FE-3PW-7001, Rev. B, sheets 4 and 5 for horizontal and vertical projections, respectively.

For ESM

4. ESM front-end assembly drawing, SR-FE-EPU21-1000, Rev. C by J. Fabijanic.
5. ESM front-end Bremsstrahlung ray-tracing, SR-FE-EPU21-1001, Rev. C, sheets 4 and 5 for horizontal and vertical projections, respectively.
6. ESM front-end max. synchrotron ray-tracing, SR-FE-EPU21-1001, Rev. C sheets 6 and 7 for horizontal and vertical projections, respectively.

## Conclusions

Based on our assessment of the ray-tracing drawings, the RSC concludes that the XFP and ESM front-end Bremsstrahlung and synchrotron shielding designs meet the NSLS-II shielding policy.

## **Radiation Safety Committee**

<i>Name</i>	<i>Expertise</i>	<i>Directorate</i>
Andrew Ackerman	Deputy ESH Manager	PS
Dana Beavis	Experimental Nuclear Particle Physics	NPP
Mohamed Benmerrouche	Nuclear and Radiation Physics	PS
Scott Buda	Personnel Protective Systems	PS
Ray Fliller	Accelerator Physicist	PS
Wah-Keat Lee	Beam Line Physicist	PS
Boris Podobedov	Accelerator Physics	PS
Chuck Schaefer	Accelerator SME	ESH
Om Singh	Accelerator Controls	PS
Lutz Wiegart	Beam Line Physicist	PS
Zhong Zhong	Beam Line Physicist	PS
Emil Zitvogel	Accelerator Operations	PS
Tammy Stein	Administrative Support	PS

### Ray-tracing sub-committee

Andrew Ackerman	Deputy ESH Manager	PS
Mary Carlucci-Dayton	Mechanical Engineer	PS
Wah-Keat Lee	Beam Line Physicist	PS
Chuck Schaefer	Accelerator SME	ESH
Christopher Stelmach	Designer	PS
Lutz Wiegart	Beam Line Physicist	PS
Zhong Zhong	Beam Line Physicist	PS