

NSLS II TECHNICAL NOTE BROOKHAVEN NATIONAL LABORATORY	NUMBER 208
AUTHORS: K. Attenkofer	DATE: 3/17/2016
<i>Second Mask Survey Requirements</i>	

1 Introduction

The purpose of this technical note is to describe the conditions for an additional survey of mask 2 and defining the responsibilities. This technical note was developed as a response to the RSC report generated on March 11, 2016: [iss_rsc2016_final](#).

2 General Description

MA2 acts as a white beam stop and a mask for the reflected beam from the high heat load mirror CM1, and is located inside the collimation mirror tank. As shown in Figure 1, the mask is directly mounted on the base-granite, and completely decoupled from the vacuum tank. All alignment features are located outside of the tank. The in-vacuum mask body itself is fiducialized (Survey Report: [Mask2 Presurvey Result 2016-01-06](#)); another set of fiducial marks is mounted outside of the vacuum tank on the adjustment unit. (Survey Report: [Masks Survey Result At 8-ID-ISS Beamline 2016-01-21](#)).

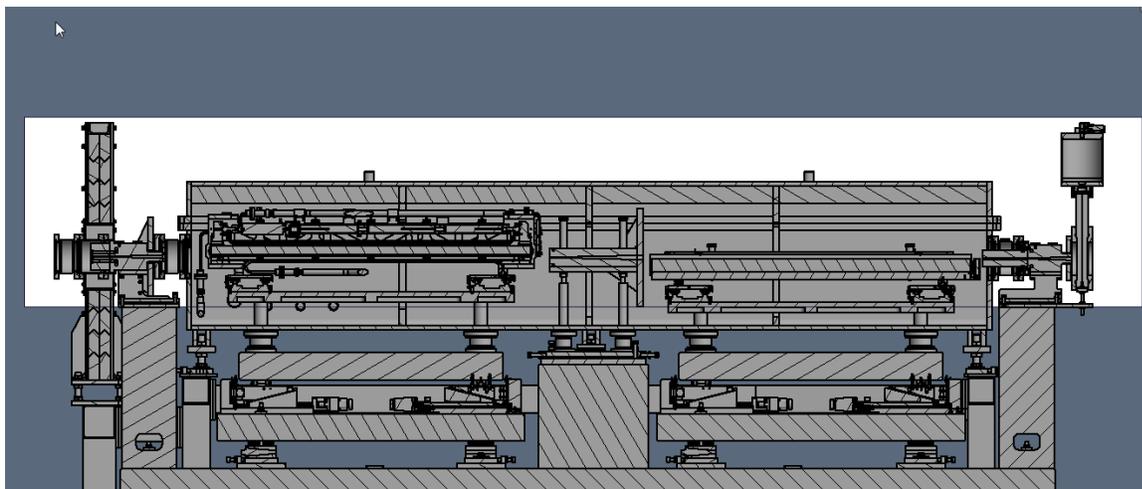


Figure 1: Collimation mirror system with MA1, the high heat load mirror CM1, MA2, the collimation mirror CM2, MA3 and various secondary bremsstrahlung shields (beam direction: right to left).

3 Conditions for Survey

Due to the decoupling of the vacuum tank from the radiation safety components, it is not necessary to re-survey the masks if work on the CM-system is performed, which does not require the removal of the top lid. These activities may include, 1) the change of one of the smaller flanges on the out-board side of the tank or 2) vacuum bake-out of the complete tank.

A survey of the external fiducial marks of MA1, MA2, and MA3 shall be performed after the tank has been brought back to vacuum if the CM tank lid was removed and no major rigging activities inside the tank were performed. Typical work which can be performed would be changing or testing thermocouple sensors, changing of the cooling lines of the mirrors, or work on the electrical motors/encoders.

Additionally, in the case that CM1, CM2, or other heavy equipment have to be moved or replaced, the external fiducial marks of MA2 have to be checked against the internal fiducial marks mounted on the mask body.

4 Responsibilities and Permit

In the case that work on the collimation mirror tank has to be performed, a Safety System Work Permit (SSWP) is initiated by the Lead Beamline Scientist. The Lead Beamline Scientist is responsible for including all necessary survey tasks on the SSWP.

This technical note is part of the required training for the 8-ID Lead Beamline Scientist.