ARGONNE NATIONAL LABORATORY
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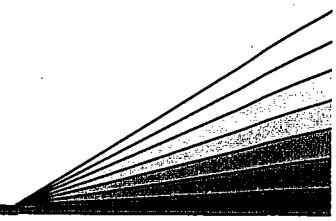

Advanced Photon Source

DATE:	Feburary 1, 2006
TO:	W. Ruzicka, AOD Division Director
FROM:	K. Randall (Chair, BSDRSC)
SUBJECT:	8-IDMonochromator Upgrade Review

Sector 8 have proposed modifying the crystal cooling assembly for the monochromator in the 8ID-D station. At present the monochromator has in-vacuum coolant channel joints. This is acceptable in the present beamline configuration since there is an upstream window. However the scientific program at 8ID requires upstream windows to be removed due to beam quality degradation. The proposed design utilizes a continuous pipe without in-vacuum joints. The scientific merit of the beamline upgrade and the technical content of the design was reviewed internally by XFD (see attached memo from M. Beno). At the BSDRSC meeting on December 8, 2005, it was agreed that our only concern was related to compliance with the APS vacuum policy. As stated in the attached email from J. Noonan, the water cooling design is in compliance with APS vacuum policy.

It is important to note that there were no RSSC issues, since the optical configuration is identical to the previous design.

I therefore conclude that a thorough safety review has taken place and recommend that the 8IDMonochromator Upgrade be approved.

W. G. Ruzicka 2/2/06

Concur, AOD Division Director / Date

Attachments:
1) Memo from M. Beno, dated 1 December, 2005
2) Email from J. Noonan, dated 1 February, 2006

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INTRA-LABORATORY MEMO

Date: December 1, 2005

To: Efim Gluskin XFD Division Director

From: Mark A. Beno MB

Subject: Upgrades to 8ID-D Monochromator

As a result of a request from Jin Wang for a review of plans for an upgrade to the 8-ID-D monochromator to include water-cooling, a design review was held by the XFD Design Review Steering Committee on Nov. 7, 2005. Following a presentation of the technical justification for the changes by beamline staff, Soon Hong Lee of the XFE group presented the detailed design. Copies of their presentations are attached. In light of the presentation by Michael Sprung and discussions with the 8-ID staff, it was the opinion of the committee that the proposed modifications to the 8-ID monochromator were a significant upgrade to the present design and that the changes were clearly justified. The details of the design presented by Soon Hong Lee showed that the proposed monochromator modifications were technically feasible and should enhance the operation and stability of this beam line. Because this change involves water cooling of a component in a window-less beamline the committee carefully examined the proposed design for compliance with the APS vacuum policy and found that Lee's design clearly met all criterion for this type of installation. It was the opinion of the committee that no further review of this proposal is necessary since no RSS components are involved and mechanical review is not necessary because of the clear compliance with APS vacuum policy and norms of the proposed design. It is the recommendation of the XFD Design Review Steering Committee that this component be fabricated and installed for 8-ID-D operations as soon as it is practical to do the beamline modification during a shutdown.

Approved: E. Peterson
XFD Director

cc: M. Sprung, M. Ramanathan, P. Den Hartog, K. Randall

Subject: 8ID monochromator and Thermal fatigue test station
From: John Noonan <noonan@aps.anl.gov>
Date: Wed, 01 Feb 2006 14:11:23 -0600 (CST)
To: randall@aps.anl.gov
CC: noonan@aps.anl.gov, mohan@aps.anl.gov

Kevin:

8ID monochromator cooling

I have reviewed the changes for the 8 ID monochromator. The existing device has an in-vacuum water joint, but the beamline has a Be window.

The new monochromator has a solid copper cooling tube within the vacuum vessel, so the water-vacuum joint has been eliminated.

I examined the drawings for the new design. The design was sufficiently straight forward and uses proven technology. So I am approving the design without the need for a full mechanical panel review.

The new design is approved for windowless operation when the beamline removes the Be window.

Thermal fatigue test station in sector 26 ID.

I reviewed the drawings for the proposed thermal fatigue test station that will be operated in sector 26 ID beamline.

The design has no water-vacuum joints and the water is outside of the highest x-ray power. In addition it is based on a design that was successfully used in experiments at ESRF.

I approve the thermal fatigue test station for operation in 26 ID.

John Noonan