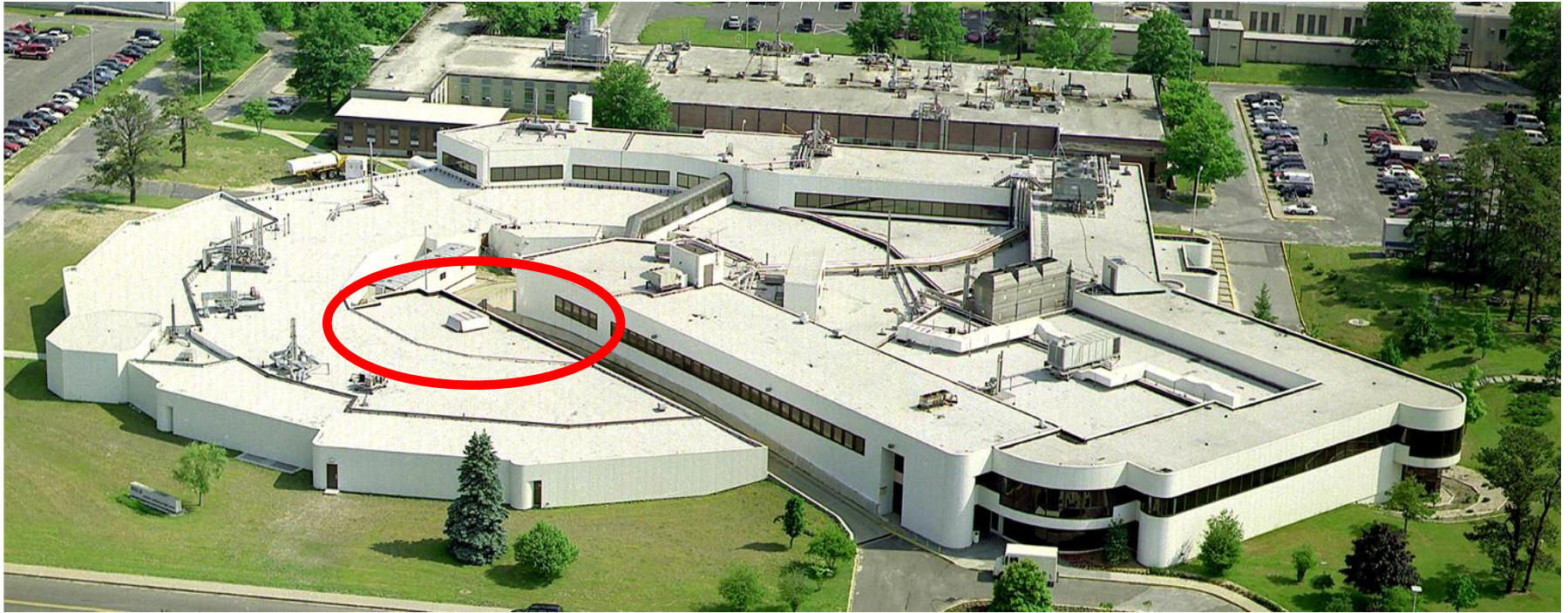


July Roof Repair and Lost X-ray operations



**Diane R. Hatton, Photon Sciences Directorate Chief Operating Officer
for
Erik Johnson, Photon Sciences Directorate Deputy Associate Lab Director
UEC Town Meeting
August 15, 2012**

Why the urgency to repair this roof now?

- This portion of the roof is over the X-ray equipment area
- Full of x-ray transmitters, power supplies and lots of 480v equipment
- Water intrusion into the area and onto equipment occurring with alarming frequency
- F&O had resources available to deal with it now



Work to address the problem

- Work to be completed
 - Replace roof over the RF Electronics Room
 - Removal of existing roof
 - Replacement of Roof material
 - Hot tar application
- Work Permit Meeting – June 22
 - Included walk down of roof area and discussion of proper location of the hot tar kettle. Discussion of keeping hot tar kettle away from HVAC fresh air intake
 - Suggestion that work take place during shutdown period/holiday week -- Week of July 2.

How this was supposed to work ...

- The Plan
 - June 29 - Contractor sets up 30-yard dumpster and stages roof area
 - July 2 - Remove existing roof material
 - Project to continue during the week with the exception of the July 4 holiday
 - Work resumes on Thursday, July 5
 - Tar operation complete before Monday, July 9 with possible work on the weekend (July 7,8) to meet completion date.

... *"facilis descensus Averno"* - Virgil

very loosely the road to hell is paved with good intentions

What happened - I

- July 2 and 3 – no work takes place.
- July 6 – email from F&O advising that material did not arrive. Work rescheduled to start July 9.
- July 9 (Monday) – F&O Facility Complex Manager secures NSLS AC-1 and AC-2 to avoid fume intrusion into 725 (NSLS Research Space Manager notified). X-ray ring does not start up as planned due to vacuum issues. Roof removal process begins. By end of day, 1/3 of old roof removed.
- July 10 (Tuesday) – Application of new roof system begins. Hot tar kettle fired up and heating of tar begins. No fume complaints from 725 staff.

What happened - II

- July 11 (Wednesday) – hot tar roofing still in progress. Next step is to apply the last roofing material called the cap sheet which involved the application of a cold applied adhesive. Process to begin on morning of July 12 (Thursday).
- Concerns raised by PS ESH about the cold applied adhesive and the V.O.C. fumes. As a result, F&O decided to secure AC-1 during the process and an email was sent to the NSLS RSM and the control room, informing them of the shutdown of AC-1 scheduled for Thursday morning at 6 a.m.

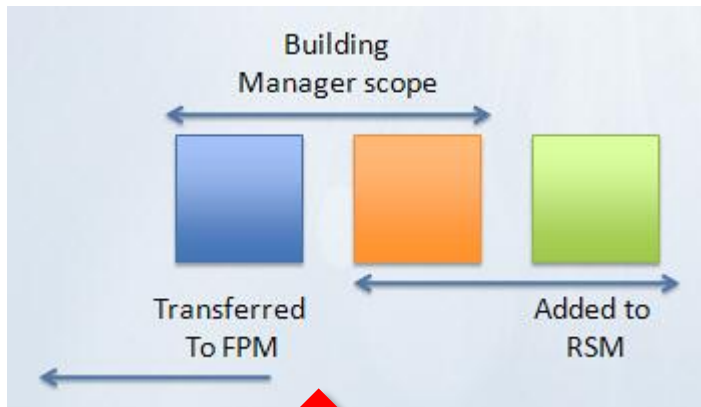
What happened - III

- July 12 (Thursday) 6 a.m. – AC shift worker shuts down AC-1 at 6 a.m. to prepare for the application of the roof adhesive.
- July 12 (Thursday) ~7:00 AM – Roof work begins.
- ~8:15 AM – X-ray RF equipment overheats due to lack of AC.
- ~8:30 AM– Erik Johnson gives the authority to shut down the NSLS X-ray ring so that the systems do not overheat.
- July 13 (Friday) 1:00 PM – Last VOC material applied to air intake
- 3:00 PM – NSLS x-ray ring returns to operating status 2 hours after last VOC applied (mfr specified set time)

Lessons Learned

- Communication needs to be improved between Facilities and Operations and the Photon Sciences Research Space Managers

Research Operations Coordination and Oversight



Old Model

'New' IFM Model under ROCO

This job fell apart in this crack of coordination

Looking Forward

- Research space managers being copied on all correspondence related to work in Photon Sciences buildings.
- Research space managers now attend weekly NSLS Operations Supervisors' Meeting -- Tuesdays at 1:30 – so they are aware of operations plans for the week.
- Will continue working to improve on our implementation of the ROCO framework to address gaps in coordination we have discovered