

Remote Workstation Review Inspection

The remote workstation review program is not intended to replace in-home inspections of review workstations; however, this year because of the Covid-19 lockdown problems, we do not wish to enter radiologist's homes and I believe the radiologists are hesitant for us to enter their homes. Therefore, this program was developed as an interim measure so that radiologist can continue using their home workstations. Once Covid-19 becomes history then we will resume the regular home review workstation inspections.

The object of a workstation inspection is to verify that the Review Workstations are set up such that they are displaying information in the grayscale display function format and that the information coming onto the monitor screens from the PACS system does not have an added additional lookup table applied to it.

To this end, we normally inspect the workstation by displaying an AAPM-QC pattern from the PACS and measuring the brightness steps to verify that the brightness is conforming to the grayscale display function. In the case of these Covid-19 circumstances, instead of measuring directly, we are going to measure a photograph of the workstation.

Cameras add their own lookup tables to the images. Therefore, we need a way to remove the lookup table that has been imposed by the camera that is photographing the monitors so that we can verify that the monitors are in compliance.

I have constructed a device that gives an illumination pattern that we have previously measured before sending it to you. The idea is that you will place this device adjacent to the monitors, so that when you photograph your monitor you are including a picture of the device. You then e-mail your photographs to me and I will measure them and compare the brightness steps in the device pattern to the known measured brightness. I can then through an interpolation algorithm calculate the brightness of the eighteen steps from the AAPM-QC pattern and check that they conform to the grey scale display function.

I will also ask you to verify that on the AAPM-QC pattern you can see the tiny squares in the corners of the larger squares numbered 2 through 17. Also, I will ask you to tell me how many of the quality control letters that are visible to you. (I cannot reliably do this myself from the photo because of the camera's lookup table).

If you have a monitor quality control program, e.g., MedicalQA, on your computer I would also ask that you run the program that checks for Greyscale display. Unfortunately, I have come across a few cases where this program does not seem to work correctly. For this reason, I have gone to this extra effort to verify that your monitor is behaving correctly using this device.

I believe that this remote program will be sufficient to approve over 90% of the home Review Workstations without a home visit.

However, if I am not completely comfortable with the results then I may still need to perform a house visit.