

WRSU Transmitters

Work in Progress.

All:

I would like to thank most of you for your patience caused by the failure of our main transmitter on May 17. Obviously we were not expecting this, and there was no way to know this was going to happen.

A little background on what 'we' have been doing over the last several years to upgrade the transmitter system.

1. The first major upgrade was the addition of a cooling system which had 3 times the cooling capacity of our old system to maintain proper operating temperatures in the building. The transmitter building is a Cement Block building which gets very hot by itself due to solar heating.

We need to dissipate solar heating, the heat from all the electronics. Plus we knew the 'new' transmitter would be less efficient than our current transmitter, so more heat would be generated.

2. The audio transport was converted from Analog (which was originally installed in 1973) to Digital. This was a long and involved process, which WRSU needed to have a 3 foot deep trench dug to lay the fiber optic cable to the transmitter building. Installed were two audio paths, one for a main audio, and a second for our future wrsu-2 HD signal. Plus we installed a TCP/IP connection for control circuits.
3. We started the new transmitter process about 2 years ago. After research and competitive bidding, we ordered a 3 kilowatt unit, which could be used for WRSU FM Analog and WRSU HD in the future. We did not purchase the HD equipment, but the transmitter is 'digital ready' from Harris Broadcast. So we tried to future proof the very expensive transmitter purchase. If you notice the new transmitter is labeled with a "d", and the older is labeled with an "a" for Analog.
4. WRSU had installed a high current Surge suppressor to protect the new equipment. This took about 5 months. Several years ago, the 'original' WRSU

transmitter was on the air, and a high voltage surge come from PSE&G which literally melted wiring, blew every fuse in the building. After several attempts to repair the original transmitter, it was deemed a lost cause. Harris Broadcast, the manufacturer, officially obsoleted this model in 1999. And we were still using it over 10 years later.

5. The rack for the new transmitter was installed, and the transmitter mounted into place. Contractors were needed to cut and install the new coaxial cable from the transmitter, to the antenna switch.
6. Electricians were brought in to run power to the new transmitter.
7. WRSU purchased a new 'state of the art' broadcast limiter, Opimod 8600FM, which uses digital processing of the signal for maximum fidelity of the sound. The unit was future proofed in that for a 'small' additional cost, it could be converted to be used as the audio processor for WRSU -1 HD.
8. This bring us to early May 2014. All the contractors had completed their work, and now the new transmitter needed to be interfaced to the remote control, and calibrated. The plan was to have new transmitter on the air in early June 2014. The old transmitter had other ideas.
9. The Regulating circuit to the screen grid of the 'old' transmitter failed. As of this writing, it still has not been repaired, but we are working on it.
10. Working transmitters is dangerous work. Nothing in the studio side of the station has the capability of killing you, unless you stick your finger in the socket. RF Power is difficult to work with. Some of our staff have helped me at the transmitter over the years. I often give them rubber gloves. And I wear gloves. Electricity is a great servant, but it must be treated with great respect. An error could mean melted and burnt circuits, which are very expensive to repair. Great care is taken whenever any work is done in the transmitter building.
11. It took several long nights and days to complete enough of the wiring to put us back on the air. If the new transmitter was not already in place, we would have been off the air for even a longer time. And the wiring is NOT complete. Several more controls need to wired. Some requiring us to be off the air again.

The point behind this long email is to point out that the Engineering Staff, and Professor Espar have been working for years in the upgrade process of our facilities. All the while trying to keep costs down. WRSU has an extremely limited amount of

funds to maintain, and run ourselves. Everything must be best cost, for the long term good of the station. Nothing is done on the spur of the moment. The plan is always for the long term good of the staff and station. Everything commercial broadcast quality is VERY expensive. We cannot afford to make too many mistakes.

There were several comments being sent over the DJ list on how poor we were doing, and if this was a commercial station the entire management staff would have been fired.

I work in corporate, and I agree. If we were a commercial station, and was down for such a long time, many staffers would be gone.

THIS IS NOT CORPORATE.

This is a student educational radio station, being run mostly by volunteers, running on very limited funds.

If this was a commercial station, we would have new transmitters every several years. Why? What is \$50,000 to a money making corporation? Nothing. Corporate radio would have a new transmitter sitting in a box in the corner, plus 2 active transmitters.

In the corporate world, people have jobs. And they do their jobs because they want to continue to be employed. Corporate has money to purchase small things like a new transmitter, which out thinking too much about it. Plus staff to do the 'distasteful' work to keep us running.

Instead what we have are volunteers, which 'we' can make them do very little. They need to volunteer. The station is run by a small core staff of about a dozen. It has been this way since I joined many decades ago. And it is not going to change.

I have a saying "There is always something to do at WRSU".

A truism if I ever heard of one. Instead of complaining, come and help.

I would be more than happy to hand you the keys to the transmitter building and let you go down to the corn field in the middle of the night, and put on the rubber gloves, and hope the 3 Kilovolts supply has discharged enough. Then figure out what died.

I am tired of people which complain, but do not volunteer to help. Or claim to volunteer and then do nothing. Come and see me some time. I have a long list of

things that need to be done. Over the years, I have done practically every job at WRSU. I know how much work it takes to make something happen. It is very easy to criticize. Very few staff member realize the time it takes to do some of the things required to 'make radio'. The Engineering Staff is small, and is expected to fix things destroyed by our staff. Keeping things going so not to interfere with 'your show'. From my personal point of view this is disheartening. I am a volunteer, just like you. I get don't get paid, just like you.

It would be difficult to find someone which has worked behind the scenes for so long, and done so much for this place, and I then I get criticized for not working hard enough, or fast enough from a small segment of our staff.

You want help, but are clueless. I understand that. I often have been in that position.

Write a check. I would be more than happy put in a second new transmitter with your money. And while you are at it, we could use another new Limiter for the new transmitter you just bought for us. Write a Check.

Next time something does not work, or isn't being done, come and see me. I then can assign you to the team to correct the problem. And if you don't meet the deadline, you will at least have a bad review, or be pointed to the door. Isn't this the way corporate works?

WRSU is a volunteer organization. We are supposed to be here because we are having 'fun'. If you cannot offer assistance, please find someplace else to go. Or least be quiet.

Daniel Schleck

Chief Engineer WRSU

Since 1976

