

Green Bank RFI Management Cycle 4 Progress Report (May 17 - June 30 , 2004)

1. Direct Observer Support:

- Several observers were supported with spectrum research and allocation information in several different bands. Some spectrum monitoring support was also provided.
- In support of the Solar Radio Burst Spectrometer, extensive effort was provided to further suppress power line RFI events.
- Some RFI group members supported Carl Chestnut in the investigation of a possible front end overload problem at the 40 foot.

2. NRQZ Administration:

- Denise completed 6 requests for preliminary evaluation on 10 transmitter sites. She also completed 29 regular applications for 131 sites. ERPd restrictions were requested on 10 sites.
- RCC requested an NRQZ waiver to allow Albemarle County, VA flexibility to "blanket" license the entire county for proposed 4.9 GHz temporary/mobile operation. This spectrum has been recently transferred to public safety from Federal Government use (Ref FCC 03-99; WT Docket 00-32). Since areas of the county were identified as risks for harmful interference, the waiver request was denied until more information is available on the "tweaked" 802.11 series equipment.
- Two cellular sites were inspected. One failed due to improper antenna orientation.
- Wes continued the review, consultation and approval of site engineering data for license applications as required. He also continued work with the Pocahontas County 911 Director to improve coverage without exceeding NRQZ limits.

3. Community RFI Management:

- Some field support was provided to the cable company to temporarily suppress a large RFI leak in a damaged feeder splice. The splice has since been permanently repaired.
- Two RETs and a Pocahontas County high school student collected GPS coordinates for all the proposed 802.11b sites at Snowshoe. RFI risk assessments, based on these coordinates, were then performed.
- A brochure, to better inform the community on RFI free electric fence operation was completed and sent to CV for production.
- The coordination of our first local DirecWay system is underway. Both Hughes and the customer are cooperating fully.

4. Spectrum Summaries:

- A summary for the PF2 band and for the 125 - 200 MHz range was completed and posted.
- Toney Minter completed a RFI survey for the Ku band. A link to his survey is provided on the RFI Management web page.

5. IPG Instrumentation Calibration, Repair and Improvements:

- The SE test set upgrade was completed .
- The preliminary design for the GBT RFI monitoring station was completed. A substantial amount of the required hardware was purchased. Remaining cost drivers were identified.
- The Navy has indicated that they intend to donate a Watkins Johnson WJ8679 pseudo doppler VHF/UHF DF system to the Green Bank site.

6. Outreach:

- A talk was provided for the Chautauqua group.

- During the latter half of June, the RFI group and other staff supported a Richmond Times Dispatch interview on the National Radio Quiet Zone. A nice article was later published. The effort was coordinated by Chuck Blue.
- Denise and Wesley attended the change of command ceremony at Sugar Grove.
- The RFI group spent considerable time with the RETs who are participating in the Quiet Skies Outreach effort. A quick overview of total RFI Management at Green Bank was provided, then the following topics were covered in detail:
 - Spectrum allocations and Key RFI sources in the NRQZ
 - Incidental emissions measurement and suppression
 - Shielding effectiveness testing
 - NRQZ license coordination
 - Transmitter site evaluation and propagation studies
 - Community RFI tracking and suppression.

They also participated in a transmitter site inspection to learn more about communications system design and implementation, antenna pointing, grounding requirements, and other site design details.

- Wes hosted a Memorial Day visit from Dr. Dennis Friday, Chief of the Electromagnetics Division, National Institute of Standards and Technology.

7. On-Site RFI Management:

- A working RFI suppression scheme for the compact fluorescent fixtures in the New Science Center was developed. Filters were specified and cost drivers were identified.
- A noisy HVAC power controller at the GBT actuator room was identified.
- An abrasive strip was installed on the hold-down bracket for the GBT actuator room RFI door gasket. This seems to be alleviating slippage problems.
- Dome screens and filters for the site Josler security cameras were identified after extensive testing. Sufficient quantities of screen and filters are on order.
- A collection of PC monitors, including some flat panel monitors were tested in the anechoic chamber. The emissions from flat panel monitors were identified as more objectionable than tubes.

Report prepared by Jeff Acree.