

Alaska Public Broadcasting, Inc.
Project Number 0117-DC-2004-15
April 1, 2010 – June 30, 2010
Quarterly Report

Alaska Rural Communications Service & Satellite Interconnection Revitalization

Project Summary: the ARCS revitalization project is almost finished. The project objective is the restoration of television broadcast programming to bush and rural communities by either repairing or replacing non operational equipment. This includes transmitters, antennas, satellite dishes, receiver/decoders, or towers.

Restoration of service: reliable ARCS service has been restored to more than 100 bush and rural communities where it had been completely off or seriously degraded.

Acquisition and refurbishment of equipment: refurbishing original transmitters saves approximately \$5000 per unit compared to purchase of new systems. We continue to cycle rebuilt units to the villages and bring the failed units back from those communities and send them off to the factory for rebuilding. We have rights to use some new receivers to decrease our response time when existing units fail in the villages.

Provision of timely customer support: with a system that includes more than 200 sites, technical staff is kept busy each day with myriad general service and trouble calls involving unique factors and circumstances to analyze and address. The range of work can run from a simple reset to a complex set of problems resulting in the complete failure of a village's local service.

Establishment of community partnerships: the majority of the service restoration work is attained through partnership, technical staff working with dedicated community volunteers. Some sites and projects require staff travel in order to deal with the extraordinary circumstances.

Phases two and three are complete: modern technology based systems were designed and implemented allowing for consolidation of a delivery system and central point of control for multiple content streams. A new method of controlling the ARCS program schedule is fully operational, allowing for remote operation. Equipment purchase and installation of the new State of Alaska satellite uplink system became operational on January 25, 2007.

The overall project is on schedule and within budget. We have not encountered any serious unanticipated problems or set backs requiring significant changes to the work scope. Restoration or upgrading of service presents a different challenge in each community. In partnership with our community liaisons, we continue to identify and solve these problems.

Activity detail: April 1, 2010 – June 30, 2010

- ARCS Technical Support handled 148 calls for assistance from 38 different bush and rural communities serviced by ARCS. As email has become more readily available in the villages we see on average around two dozen email contacts per month that in the past would have been phone calls.

- Akiak: Dish alignment following satellite receiver replacement. This can be very frustrating as it requires patience and painstaking manipulation of the dish antenna.
- Delta Junction: When the transmitter failed and a local helper described the scene, we suspected a blown main breaker and were preparing to have the whole system shipped to our office in Anchorage for further diagnosis. However, as is sometimes the case, a local techie offered to take another look and found the main power fuse had blown. He found a replacement and service was restored to the Delta area viewers
- Mountain Village lost their ARCS service following an outage of unknown origin. However, by the time the outage had passed, the ARCS receiver was simply not on the correct channel. Adjustments were made and service was restored.
- Skagway ARCS went down in mid-April when the power supply on the modulator failed. This is one of the most common failures we see as it is caused by erratic power in the villages. Once the replacement was made service was restored, only to fail again the next day. A loose RF cable was found to be the problem; it was corrected and they had their TV back.
- In Stony River their satellite receiver had been disconnected and was not working. With some phone support they hooked it back up and we got it working for them. However, the transmitter and modulator had failed. We swapped in a refurbished unit and their service returned.
- In the middle of April we started to notice that occasionally the picture on ARCS would disappear for a few moments, then return and operate normally. Problems like this are the hardest to track as they could just as easily be a bird sitting on our own dish antenna, as they could be a system wide uplink failure about to happen. Working with our counterparts at the KUAC uplink center we tracked the problem to an intermittent video cable feeding the digital encoder. Once that was replaced the problem evaporated. Only the programming from one network, Alaska One, was affected as the cable was between theirs and our gear only. Two weeks later, another system wide outage was easier to identify; the KTUU receiver, which our uplink uses to acquire the NBC signal, died suddenly. A simple replacement solved the issue.
- We ended the quarter with a final shipment of refurbished satellite receivers and television modulators coming back into our office from their respective factories. With the grant closing out these units will give us a short term cushion to help some communities keep their only free over the air television service on the air.

Alaska Public Broadcasting Digital Distribution Network

Project Summary: project objective is interconnection of public broadcasting system facilities by means of the internet or constructed intranet. Upon completion of the network, delivery of content - programming, data and voice - and access to advanced networking options will be available to the system, enhancing service to local, regional and statewide audiences. The project is based on a network design developed under a previous federal grant from the US Department of Commerce. The project began in March 2004 and milestones include:

Review of network design and work scope: a thorough review of the original design and work scope was completed to determine if the selected equipment was still the best choice.

University of Alaska partnership agreement: entered into a multi year agreement with the UA statewide office of information technology for provision of connectivity between the hubs via

the UA data backbone; and operational oversight of the network on a twenty-four hour basis. This oversight provides rapid reporting of problems so system maintenance and repair can be provided with minimal down time for network users.

Equipment bids, purchase and deployment: the core equipment for the hub and control locations was installed in August, 2005. Data network equipment for 26 stations has been installed. Competitive bidding yielded average discount of 31% saving \$465,000.

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All sites have been installed. Current activity is occasional technical assistance being provided to personnel at various sites.