March 13, 2003

In Regard to: Proceeding Number 02-8

Channelization of the 217 to 220 MHz. Band.

Comments by Donald B. Schultze
Data Flow Systems, Inc
605 N. John Rodes Blvd.
Melbourne, FL 32934-9105

Statement:

These comments concerning the re-channelization of the 217 to 220 MHz frequency band are offered to request that the plan submitted by APCO (Plan 217RH) showing 479 channels between 217.000 MHz and 219.99375 MHz be adopted.

The LMCC Version 1 Plan with 25 kHz channels beginning at 217.015625 would create extreme hardship and expense to many existing municipal, county and state entities using radio telemetry to monitor critical infrastructure.

History:

In about late 1994 Data Flow Systems was encouraged by one of the APCO volunteer coordinators, to investigate the 216 to 218 MHz. band. It should be understood that this advice was offered for several reasons. First, telemetry was secondary to voice in the 450 to 470 MHz. band. Secondly, the crowding of the 450 to 470 MHz band and the near impossibility of obtaining licenses in urban and metropolitan areas using one of the few telemetry channels available in the 154 or 173 MHz band made the 216 MHz to 218 MHz band look very attractive. Thirdly, this "new" band was limited to telemetry only, and as such was believed to be very safe from incursion by voice entities.

Thus, Data Flow Systems, (herein referred to as DFS), contacted the FCC directly by telephone and was informed that coordination was to be done by the applicant or his agent and that as there was no channelization in place, any frequency could be requested. In fact, the very first license (WPHW931 granted on 8/3/95) applied for by DFS to use for engineering purposes was requested for 216.820 MHz. Upon further reflection and additional research of the existing channels shown on the ULS "Gen Men" page, it was decided to amend the application to request 216.825 MHz.

Further investigation showed that virtually every licensee listed in this band was for radio transmitters on 25 kHz centers beginning with 216.025,

216.050, 216.075, etc. In fact, when recently visited, the "ULS/Gen Men Report" page continues to show "0 Rows Retrieved" for nearly every frequency not on the previously sited 25 kHz channel centers. Virtually all of these "0 Rows Retrieved" appear only under the IBFS database, and for the most part, only channels on the standard 25 kHz centers appear on the ULS database. Thus, the natural conclusion is that the great majority of legally licensed entities, including colleges, and universities, geophysical companies, petroleum exploration companies, and power generating companies such as Southern California Edison and Commonwealth Edison all hold licenses on the even 25 kHz centers beginning with 217.000 MHz.

With this knowledge in hand and with the approval of the FCC, DFS began licensing their water and wastewater clients in the 216 to 218 MHz band as FX1 and FXO class licensees. Early in the year 2000, the FCC stopped granting fixed operational licenses (FXO) to clients in the 216 to 218 band based on the previously overlooked rule cited in 90.35(b) and 90.239. This was addressed in DFS petition RM-9882, and subsequently the rule was changed as part of Report and Order 02-152 to allow FB/FXO/MO classifications to be granted. It is important to note at this time that for the 5 years between 1995 and 2000, the FCC continued to grant licenses with the FXO classification. The FCC as well as DFS had overlooked or misunderstood the meaning of the 90.35 and 90.239 rulings.

When this was discovered it had the potential of stopping all expansion licensing of water and wastewater systems using this telemetry band. Most of the existing licensees would in the future require many additional radios at reservoirs, storage tanks, and pumping station sites. An in-person visit to 1270 Fairfield Road, by this writer, resulted in a temporary compromise while the petition RM-9882 was being reviewed.

That compromise, verbal and inferred, allowed that there was no reason why DFS could not continue to license new and existing systems as FB/MO as long as the antennas at the remote sites did not exceed 6 meters AGL. Further, when the petition was approved to allow licensing as Fixed Operational, these mobile sites would then be licensed as such. This was based on the fact that it was a telemetry band, and that such licensing (FB/MO) was permitted in the UHF bands.

Over the course of the next year Petition RM-9882 seemed stalled and then it was discovered that the Re-allocation Act, with its many reviews of Report and Order 02-152, had rendered the petition moot. However, in accord with the acknowledgement of Gettysburg, DFS was forced to continue licensing

new clients and providing existing clients with radios for their expanding systems and thus licensing them as FB/MO. This of course created many additional sites for the systems, to be licensed later as FXO. The result of all of this is that there are now approximately two to three thousand remote terminal units licensed to approximately 150 water and wastewater radio telemetry licensees across the country.

Many of these licensees are large counties with phenomenal future growth potential. Of course, this does not even come close to addressing the balance of other non-DFS licensees nationwide such as Exelon Generating Company, So. Cal Edison, Exxon, Western Geo, PG&E, State Universities of Boise Idaho, Pennsylvania, the University of Memphis Tennessee, and many, many, others that are licensed on the 25 kHz centers as proposed by APCO.

In addition to all of the above it should be noted that DFS is or was presently in the process of re-licensing all of its clients with licenses in the 216 to 217 portion of the spectrum. As this one megahertz of spectrum was given over to the hearing impaired by virtue of Report and Order 02-152 it is no longer judicious to have our clients continue to operate in this band or try to expand their systems by filing waivers for additional licenses. Thus our plan was to re-license them or modify their licenses to the 217 to 220 MHz band. This is not a technical problem as long as the band centers remain as they are with 25 kHz spacing beginning at 217.000 MHz. All of DFS client radios are frequency synthesized for 3 decimal accuracy and require only a few seconds on-site to change to the new frequency with the use of a laptop computer.

Technical Problems of Adopting the Non-APCO channel plan.

This writer cannot speak to the radios used by other entities but it is obvious that the channel plan put forth by APCO requiring only 3 decimal point accuracy for all 25 kHz channel centers is by far the preferred plan. In that regard, the proposed 12.5 kHz channel centers require only 4 decimal point accuracy and the future 6.25 kHz channel spacing would require only 5 decimal point accuracy. The last zero in each of these is of course not relevant. To re-iterate, in APCO plan the first 25 kHz channel would be 217.025 MHz, the first 12.5 kHz channel would be at 217.0125 MHz and the first 6.25 kHz channel would be at 217.00625 MHz.

It appears to this writer that this makes abundantly more sense, especially in light of the fact that to incorporate a 3.125 kHz shift down to accommodate the original LMCC band plan would require replacing every radio presently

operating in the field. It is a fact that in all DFS radios, retro-fitting new synthesized integrated circuit components would be required to meet the 6 decimal place requirement for all 12.5 and 25 kHz centers. This would also require revised circuit board layout and the re-licensing of every client now operating on the old 25 kHz channel centers. The cost just to DFS to do this is estimated to be at least 3 million dollars. This could well be a deathblow to a small company with an annual gross income of only double that.

This does not even approach the cost that would be incurred by the 190 or so DFS' clients presently operating licensed systems to monitor expanding critical infrastructure in their communities. Waiver grants under the grandfather clause for these licensees desiring additional sites is not the answer as it would result in an odd mix of channel centers impossible to track and maintain coordination for, with regard to future geographical users.

Additionally, if forced to re-license to new channel centers, existing water and wastewater licensees will be required to run parallel systems during change-over to prevent shut down, or be required to maintain multiple crews to visually monitor and inspect each and every site daily to meet EPA standards. Should an un-reported pump failure occur in a sewer pumping station, a serious overflow resulting in possible health issues would become a definite possibility.

Conclusion:

It is the conclusion of this writer that the most reasonable approach to the channelization of the 217 to 220 MHz band is to adopt the **217RH** band plan set forth by APCO. Thus allowing the existing 25 kHz frequency centers at 25 kHz intervals up from the beginning of the band at 217.000 MHz to remain as they are.

Submitted by:
Donald B. Schultze
Senior Consultant to Data Flow Systems, Inc
Radio Department.
3/13/03

Attachments:
Partial list of water and wastewater utilities presently licensed in these bands according to the APCO plan.

Attachment

217.000	University of Central Florida, Utility Dept.
	Tuolumne California, City of.
217.025	Pasco County FL, Re-use
	Blue Lake CA, City of Utilities
217.075	Chula Vista, CA Utility Dept.
217.125	Gainesville Regional Utilities
217.150	Data Flow Systems, Inc. Melbourne, FL
217.200	Data Flow Systems, Inc. Melbourne, FL
217.225	Volusia County Florida, Utilities.
217.250	Appalachian State University, Boone, NC Utility Dept.
	Englewood Water District
	City of West Mel;bourne, FL Utilities.
	City of Brunswick, GA, Utilities.
217.275	Alachua, FL. City of
	Bay Minette, AL Utilities.
	Manor, TX. Utilities
217.300	Tomales, CA. Utilities
	Town of Lee FL, Utilities
217.375	Foresthill PUD, CA.
	Lake Wales, FL, Utilities
	Cypress Springs, TX Utilities
217.450	Town of Boone, NC Utilities
	Polk County, FL Utilities
	Pilot Point, TX, Utilities
	Orange Tx, City of, Utilities
	Kipling, MS. Utilities
217.500	Volusia County, Pending from 217.600.
217.600	Volusia County, FL Utilities
217.625	Cape Canaveral, FL City of, Utilities
	Treasure Island, FL, Utilities
	NE Texas, MWD, Utilities
217.775	Yucdaipa Valley WD, Utility
217.825	St. Mary's County MD
	Manatee County, FL
	Green Cove Springs, FL
217.850	Dunedin FL, Utilities
217.900	Bonita Springs, FL Utilities
	Mineral Wells, (Palo Pinto, TX) Utilities

217.925	Duke Water Systems, Rutherfordton, NC
	City of Coral Gables, FL
	Sarasota City, FL
	Crestline, FL, City of.
	Gonzales, CA
	Bridgport, TX
217.950	Collier County, FL Utilities
	South Walton Regional Utilities, Walton County, FL
	City of Aberdeen, MD Utilities
217.975	Union SC, City of
	Volusia County FL.
	Saraland, AL
	Nevada City, CA
	Big Lake TX,
	Chula Vista, CA
	NE Monmouth County, NJ

In addition to the city and county water and wastewater utilities shown above, there are approximately 58 additional entities licensed in the 216 to 217 portion of the spectrum that will eventually have to have their existing three (3) decimal synthesized radios re-programmed for frequencies in the 217 to 220 band. This re-licensing and re-programming is necessary as most of these utilities are growing and will required considerable additional licensing.

There are also many additional utilities being held up waiting for pending applications to be granted in the 217 to 218 portion of the spectrum as well as many others waiting for a resolution of this issue before filing.

dbs. 3/13/03