



**Chapter 24, Inc.
Madison, Wisconsin**

Society of Broadcast Engineers

April 2001



**TOWER INDUSTRY PART 4 - TOWER
CONSIDERATIONS FOR DTV**

By Vicki W. Kipp

In this fourth article of the tower industry series, we will discuss tower considerations for DTV.

TRANSITION TO DTV

To leap into the FCC-mandated ATSC broadcast standard, your TV station will need to install a new digital transmitter, additional transmission line, and an antenna for your digital channel. The FCC digital channel allocation plan is based on using your existing tower. Ideally, your existing tower is able to support the addition of your digital broadcast equipment. However, you may need to modify your existing tower, or build a new tower for DTV to accommodate the increased windloading from your digital channel transmission line and antenna.

STRUCTURAL ANALYSIS

The first step is to hire a tower consultant to perform a structural analysis of your current tower. Tower manufacturers, structural firms, or tower-engineering firms should be able to complete the structural analysis. When choosing a firm, ensure that they are familiar with ANSI (American National Standards Institute), TIA/EIA (Telecommunication Industries Association)/ (Electronic Industries Association), and ASCE (American Society of Civil Engineers) standards. The analyst will need to know your tower's history. The history includes tower drawings, age, inspection reports, previous analysis, modification reports and drawings, and guy tension measurement reports. The age of a tower may not be significant if the tower has been well maintained.

Tower analysis should determine loading based on standard ANSI/TIA/EIA

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REFLECTIONS ON THE LAST TWO YEARS

By Kevin Ruppert

Now that my stint as SBE Chapter 24 Chair is almost over, I just wanted to take a few moments to look back. First and foremost, I wanted to thank all of you who have helped Chapter 24 present the many fine programs and events that we have been doing. It is critical to a volunteer organization such as this to have people that are willing to give up their time and put forth the efforts that make it all work so well.

We continue to excel in Education and Certification, Frequency Coordination, and with our Newsletter. Our monthly

programs and special events continue to be consistently good.

We were proud to host the 1999 National SBE convention and as well participate once again in the Broadcaster's Clinic and WBA summer conference. Our special Youth Programs continue to improve and attract students interested in the business.

I know that the members of the Chapter will continue with these fine efforts in the future. I plan to be one of them.

Once again, thanks for your help.

Next Meeting:

**Thursday,
April 26, 2001**

**Elections and UW
Expo wrap-up**

**Dutch Treat Dinner
at 5:30 PM**

**at J.T. Whitney's
674 S. Whitney Way**

**Meeting and
Program
at 7:00PM**

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**Digital TV Demonstration
During Engineering EXPO!**

By Steve Paugh

Spread the word that SBE Chapter 24 will give a public demonstration of Digital TV at the University of Wisconsin Engineering EXPO, held on the Madison Campus of the University of Wisconsin College of Engineering. EXPO runs from Thursday, April 19th through Saturday, April 21st. The exhibits will be open from 9 AM to 4 PM. Thanks to the members of Chapter 24 who volunteered to staff the exhibit and answer questions from the public. For more information on EXPO, visit <http://www.cae.wisc.edu/~expo/>.

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March Business Meeting Minutes

Chapter 24 of the Society of Broadcast Engineers met on Wednesday, March 21, 2001 at Madison Media Institute in Madison, Wisconsin. There were 12 members in attendance, 12 of who were certified, and 5 guests.

Tom Smith, Vice Chairperson, led the meeting on behalf of Chairperson Kevin Ruppert. The meeting was called to order at 6:40 PM. Minutes of the February meeting, as published in the March newsletter, were approved.

Treasurer, Stan Sarch, reported that the chapter's bank account has a balance in the black.

Newsletter Editor, Mike Norton, reported the deadline for the next newsletter as midnight on Friday, April 6, with the folding party the following Wednesday, April 11 at WKOW-TV beginning at 5:30 PM.

Program Committee, Denise Maney, announced that the April program, NAB Review and Chapter 24 Election, would be held on April 26 at J T Whitney's Pub & Brewery. Jim Hermanson noted that Chapter 24 still needs a candidate for the office of Secretary.

Certification, Jim Hermanson, reported that Terry Baun would hold a CBNT workshop and exam in both Oshkosh and Wisconsin Dells. There will be an exam opportunity at NAB. The next local exam period will be June 8 – 18. Applications are due by April 30.

National Liaison, Leonard Charles, reported that there will be a SBE Certification 25th Anniversary Party at NAB on Tuesday, April 24. Attendees are encouraged to pre-register. Attendees who bring their SBE certification card to the party will be eligible for a door prize. The national office is still seeking applications for the national frequency coordinator position. SBE headquarters has relocated to a new address. National SBE is seeking nominations for local chapter awards. The FCC has finally released the EAS New Codes Further Notice of Proposed Rulemaking. Please read it and file a comment since this notice strongly affects local EAS. Refer to the Chapter 24 web site for more information on this topic.

Frequency Coordinator, Tom Smith, updated on recent requests for frequency coordination. The FCC will allocate channels 52 - 59 for auction. Chairman Tauzin is pressuring for the end of analog broadcast in 2006.

For new business, Leonard Charles updated us on plans for the SBE/WBA Summer Workshop June 12 – 14, 2001 at the Pfister Hotel in Milwaukee.

Steve Paugh presented his modified DTV brochure. He has rewritten the brochure in more general terms aimed toward

(continued on next page)

Cast Your Ballot!

By Steve Paugh,
Nominations Chair

Enclosed with this newsletter is the official ballot for the SBE Chapter 24-2001 election of officers. The deadline for returning your ballot to the nomination chair is Monday, April 30th, 2001. The nominations committee will count the ballots on the evening of Tuesday, May 1st, 2001 at WISC-TV.

You may turn in your ballot in person during the April 26th, 2001 chapter meeting. Since the April meeting falls on Thursday, during the NAB (sorry about that), you may mail your ballot directly to me at:

Steve Paugh - c/o WISC-TV
Ballot
7025 Raymond Road
Madison, WI 53719

Please indicate "Ballot" on the envelope and we will hold your ballot unopened until the official counting process. Your ballot must be in our possession before we begin the counting on May 1st.

If you are going to the NAB, be sure to drop your ballot in the mail before you fly out of Madison. Remember that your membership must be current to be eligible to vote. Your membership number must be entered on the ballot for it to be valid. Thanks to the nomination committee members Jim Hermanson and Denise Maney.

SBE CHAPTER OF THE AIR:

HamNet meets the second Sunday of each month at 0000 GMT on 14.205 MHz. Hal Hostetler WA7BGX is the Control Station.



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AMATEUR RADIO NEWS

By Tom Weeden, WJ9H

- The FCC has turned down an application from Los Angeles County, California, for an experimental license permitting airborne microwave TV downlinks (TVDL) in the 2402-2448 MHz range. The FCC also canceled an experimental license grant to the City of Los Angeles to operate an identical TV downlink system in same band. Amateurs have a primary domestic allocation at 2402-2417 MHz and a secondary allocation in the rest of the affected band. "Experimental licenses are not substitutes for regular radiocommunication service licenses," said Charles Iseman, deputy chief of the Electromagnetic Compatibility Division in the FCC's Office of Engineering and Technology. OET issues all experimental licenses.

The American Radio Relay League, Amateur Satellite Corporation and the Amateur Television Network had asked the FCC to deny the County's application, and also had objected to the City's experimental grant. The FCC gave the City until December 1 to terminate its operation but reserved the right to accelerate the cancellation date if interference occurs.

- The most power solar flare in at least 25 years erupted on April 2. Fortunately most of it was aimed away from earth. There were incredible auroral displays, seen as far south as Mexico. In comments posted to a low-power discussion group, Paul Harden, NA5N, noted that there seemed to be an HF radio blackout below 20 MHz caused by ionizing radiation reaching the D layer. While E and F layer enhancement of the ionosphere is good for HF propagation, D layer enhancement tends to absorb radio signals. SBE Chapter 24 member Stan Scharch, N9HMA, reported that nighttime AM broadcast skywave signals suffered as well.

(Excerpts from "The ARRL Letter" and ARRL's web site)

Meeting Minutes (continued)

consumers. Steve asked for suggestions to improve the brochure. Station owners can purchase copies of the brochure. Steve hopes that stations might distribute the brochure to the general public. Each station is encouraged to create a brochure explaining what their station offers/will offer for digital broadcast. Regarding the DVT Demonstration at the UW-Engineering Expo, Tom Smith suggested that the SBE display include a monitor with an Internet connection opened to a web site about television antennas.

Vice Chairperson Tom Smith adjourned the business meeting at 7:03 PM.

For the evening's program, Chris Hutchings led a tour of Madison Media Institute and Matt Mommaerts led a tour of WMSN Fox 47.

**Submitted by Vicki W. Kipp,
Secretary**

Thanks to Denise Maney for arranging the March meeting at Madison Media Institute.



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TOWER INDUSTRY PART 4 (continued from page 1)

RS 222-F. The report should include inspection of the physical condition of the tower. It should note the condition of the antennas, grounding system, lighting system, paint, climbing and safety devices, transmission lines, hangers, foundations, guy wire anchors and hardware, loose or missing bolts, bent or missing members, and corrosion.

Analysis of a self-supporting tower should account for new DTV antennas and transmission lines that add wind load, leg/bracing members that might be overstressed, narrowed tops that may be weak, and foundations that may be overloaded.

Analysis of a guyed tower should account for new lines and antennas that add wind load, leg/bracing members that can be overstressed, and for guy wire and anchor improvements. The analysis should be done using software that is designed for guyed towers.

Either weather conditions or human error can cause tower failure. Weather failures are due to wind storm, ice storm, or large ice loads. Tower collapse from human error can occur when tower members or top-mounted antennas are being replaced. It is recommended that safety frames or temporary guys be used during these processes, and that an experienced tower engineer be on site.

Structural analysis of your tower will tell you what structural standards the tower meets. Tower standards, in order of least current to most current, are RETMA TR-116 from 1949, EIA RS-222 from 1959, ANSI A58.1 from 1980, RS-222-C, RS-222-D, RS-222-E/F, and RS-222-F from 1996. RS-222-F is also known as ANSI/TIA/EIA RS-222-F. It is possible that a tower built prior to RS-222-F may still meet that standard.

But if your tower doesn't meet RS-222-F, and you modify it, you may then be required to bring it up to the RS-222-F standard.

RS-222-F explains how appurtenances are to be positioned on a tower for minimum wind load. An 'appurtenance' is something added to another, more important thing. In this case, 'appurtenance' refers to an antenna that is added to the tower. Tower loads include dead load, wind load, ice load, and seismic load. Dead load can be antennas, transmission lines, waveguides, lighting systems, conduit and junction boxes, ladders and safety climbs, work platforms, guy wires, and elevators. Adding a digital antenna and new transmission line will increase the dead load. Wind load increases with height. Ice load is considered a serious risk since it is the leading cause of tower failure. Seismic load, subject to the vibration or movement of the ground, includes forces such as shear force, bending moment, and axial load.

Once the outcome of the structural analysis is complete, you can decide on a tower plan and draft a new budget. Structural analysis can result in no retrofit being required, a minor retrofit being required, a major retrofit being required, or a complete replacement of the tower.

TOWER MEETS NEEDS

Although it would be nice to have a tower where no retrofit is required, this is uncommon. In this case, you can proceed to install your new transmission line and antenna.

IMPROVEMENT NEEDED

This is a more common scenario. You may need to replace bracing

members and upgrade legs to avoid overstressing before you can begin installing transmission line.

The majority of towers, which would include most towers 20 years old or older, require a major retrofit. This may include removing or rebuilding large portions of the tower, replacing or adding bracing members, upgrading tower legs, and modifying or replacing guy wires.

UPGRADE

The bracing members can be upgraded by increasing the bracing size, adding cover plates on existing bracing, and adding internal bracing for overstressed girds.

If the leg members of a tower need to be upgraded, there are several options. By adding leg bracing to a leg, you reduce the length of unbraced leg and can double the axial load capability of the leg. This is the most cost-effective option. You could fill the legs with high-strength concrete or grout to increase the stiffness and capacity of the legs. You could weld or bolt plates, angles, or channels to legs. The drawback of this option is that it creates new potential rust spots.

For guyed towers, several options exist for upgrading guy wires and anchors. Existing guy wires can be replaced with larger size guys. A new guy level can be added in between existing guys. Adding new anchors or improving existing anchors will also help.

Overloaded tower foundations will need to be upgraded by adding weight or bearing area to the foundation system. In some cases, reinforcement of towers may be impractical because

(continued on next page)



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TOWER INDUSTRY PART 4 (continued)

the tower base plate is unable to carry the increased load. The base plate's and surrounding soil's ability to support the extra weight should be considered.

Shielding coaxial cables and transmission lines to reduce wind load can reduce tower loading. Sharing a transmission line will also help.

OTHER CONSIDERATIONS

There are FAA issues as well. The FAA must be notified if you change the height of your tower. This could occur if you stack or modify your antenna.

Tower owners must pay attention to public safety. Security measures should be taken to limit access to the tower grounds. Use the appropriate signage to post RF hazards. Have a responsible tower maintenance plan in place.

Insurance is another concern. You must request a "Certificate of Insurance" from the tower contractor when your tower is being modified. Once the upgrade is complete, you may have an issue with your tower's insurance company. They may be unwilling to insure a tower that has been modified. Insurers are hesitant to cover towers that have had their supporting members reinforced because reinforcement usually means additional steel welded to the existing tower legs. The welding process is different than gluing two pieces of metal together. When metal is melted, it is crystallized. The original dynamic capabilities of the metal are changed.

Channel	Channel Band
2-6	Low Band VHF (Very High Frequency)
7-13	High Band VHF
14-69	UHF (Ultra High Frequency)

Figure 1. Television channel bands.

REPLACETOWER

If the cost to upgrade your current tower exceeds the useful life of the tower or the cost/value of a new tower, then building a new tower may be the best choice. Building a new tower is no small undertaking. Tower designers are in short supply and tower crews are in even shorter supply. It is worthwhile to seek out professional help for permit and zoning presentations and for public relations. Consider partnering with others in this venture. The benefit of multiple user towers

include a lower cost per station, limited liability, management handled by someone else, greater acceptance from the community, and simplified antenna aiming for viewers.

TRANSMISSION LINE AND ANTENNA

Most stations will have to purchase another transmission line and antenna for their DTV channel. Under the right circumstances, however, it is possible to share a single transmission line or a single transmission line and a single antenna for your NTSC and DTV channels. The ability of your station to share a single transmission line and antenna depends on the channel band

(See figure 1) relationship (in-band versus cross-band) and channel separation between your NTSC channel and DTV channel. Both channels can share the same

antenna if the antenna bandwidth is adequate to provide a good match at both channels.

Sharing a single transmission line for both channels has several benefits. For one thing, there is less windloading. Another advantage is the

cost savings of only buying and maintaining one transmission line instead of two.

When you share a transmission line, you make some compromises. If there is a problem with the transmission line, both channels are affected. The power rating of the NTSC feedline may not be adequate to handle the additional DTV power. Three-inch coaxial line, which has been commonly used for NTSC, may not have an adequate power rating to carry both signals. It is probably only practical to share a three-inch transmission line if the DTV power level is low and the tower absolutely can't support one more transmission line. Six-inch transmission line is recommended for dual-channel transmission line (figure 2).

When stations combine two
(continued on page 6)



Figure 2. WISC-DT's Six-inch transmission line with elbow.

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TOWER INDUSTRY PART 4 (continued)

channels on one transmission line, the line must be broadbanded to work favorably on both channels. Transmission line elbows (figure 2) can be a problem when there is a complex installation requiring multiple elbows. In these cases, the elbows need to be factory tuned for the expected channels. Plan the transmission line run to minimize the number of elbows required. Semi-flexible line could be substituted in places that would require a large number of elbows.

It is possible to share a single transmission line while having separate antennas for your NTSC and DTV channels. However, sharing a single antenna for both channels has benefits. Advantages would be: a

common radiation center and HAAT; comparable azimuth and elevation patterns for both channels, reduced tower clutter, and lower initial and operating expense.

Sharing of transmission line requires a combiner. The NTSC and DTV transmitter outputs are both fed to a combiner. Both In-Band and Dual-Band combiners are available. The combiner feeds combined NTSC/DTV to the common transmission line. The signal travels up the tower in the transmission line. At the top of the tower, the combined signal is fed to a dual channel broadband antenna or separated by a second combiner (splitter) and fed to the separate NTSC and DTV antennas.

CONCLUSION

When transitioning to DTV, you must consider tower structure, transmission line, and antenna issues. Next month, we'll continue our discussion of the tower industry by exploring tower siting issues.

Information for this article came from the following sources:

Joe Fedele, "More Crews Needed for DTV Towers" TV Technology May 22, 1997; Harris/PBS DTV Express "Transmission System/Towers" DTV [Transmission Course] 1998; Don Markley, "Transmission lines for DTV" Broadcast Engineering, June 2000; NAB Engineering Handbook, Sixth Edition.

High-Speed Parallel-Access Disk File

Submitted By Steve Paugh

With an access time of no more than 167 msec (including 100 msec for positioning), a new magnetic disk file can store from more than 30 to almost 620 million bits. The file can include from one to 20 storage disks, each 39 in. in diameter.

Manufactured by Bryant Computer Products, a division of Ex-Cell-O Corp, Walled Lake, Mich., the series 4000 disk file offers high-speed random access, very large storage, and low cost. Cost per bit ranges from 1/10 cent for the smallest file (with a single disk) to 1/40 cent for the largest (with 20 disks). The 20-disk file allows one to read or write 40 bits simultaneously. Bryant guarantees zero dropouts and a minimum signal-to-noise ratio of 32db.

Each disk offers a useful recording surface between radii of 6.75 and 18.75 in. Each recording area is divided into

six 2-in. wide frequency zones with 128 tracks per zone. Bit densities vary downward in each zone from a maximum of 273 bits per in. Recording frequency ranges from 174 kc in the innermost zone to 431 kc in the outermost.

Aerodynamic read/write heads, 240 of them, serve the 240 frequency zones on the 40 disk surfaces. Each head floats within 1/2 mil of the microfinished surface of a rotating disk. Forty head-mounting bars, each holding six heads, are driven in unison by a single hydraulic positioner mounted on a base plate. The individual heads are selected electronically.

The head positioner is a hydraulic system of a digital, open loop type. It is addressed by a 7-bit binary signal from a control unit. The positioner can repeat each of the 128 discrete data-track positions in each frequency zone to within 1 mil without

adjustment for long intervals.

With its associated positioner and power supply, the file occupies a single cabinet, about 50-in. long, 40-in. wide, and 60-in. high. The complete assembly weighs about 1700 lb. Delivery on the series 4000 disk files is about six to nine months. Prices depend on quantity and configuration. For example, the model 4010, with a single disk cost \$41,000 for one and \$32,000 in quantities of 10 or more. The model 4200, with 20 disks, costs \$140,000 as a single unit and \$110,000 in quantities of 10 or more.

(This item originally appeared in the March 1, 1961 issue of ELECTRONIC DESIGN- page 82. It is printed with the permission of ELECTRONIC DESIGN MAGAZINE, a publication of PENTON MEDIA INCORPORATED. I thought that this would be an appropriate item for our APRIL newsletter. It also shows how far we have come.)



**Visit Chapter 24
on the World Wide Web**

<http://www.sbe24.org>

Steve Paugh is the editor for the HTML Version of this Newsletter, available monthly on the SBE Chapter 24 web page.

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FCC Rulemakings

Compiled By Tom Smith

PROPOSED

ET Docket No. 01-75; RM-9418; RM-9856; FCC 01-92

Revisions to Broadcast Auxiliary Services Rules in Part 74 and Conforming Technical Rules for Broadcast Auxiliary Service, Cable Television Relay Service and Fixed Services in Parts 74, 78 and 101 of the Commission's Rules, Telecommunications Industry Association Petition for Rule Making Regarding Digital Modulation for the Television Broadcast Service, Alliance of Motion Picture and Television Producers, Petition for Rule Making Regarding Low-Power Video Assist Devices in Portions of the UHF and VHF Television Bands

The FCC has released a very large Notice of Proposed Rule Making concerning issues that involve the broadcast auxiliary bands. This notice covers all broadcast auxiliary bands, both radio and TV, in some matter. There are 24 different items listed in the table of contents that are under discussion in the notice. Some of the items discussed include, the use of digital modulation, remote audio pick-up frequency assignments, licensing and application requirements under the Universal Licensing System procedures, frequency coordination and a request for the use on low-power transmitters in the TV broadcast band to carry video for monitoring TV and film productions. Not all the issues will be discussed in this article and it is suggested that the notice be downloaded from the FCC Web Site if you are interested in any of the issues concerning the use of the broadcast auxiliary frequencies.

The first issue the FCC discussed was the use of digital modulation of broadcast auxiliary transmitters. Currently, digital modulation cannot be used in any of the broadcast auxiliary bands without a special waiver from the FCC. Digital modulation is allowed by other services including common carrier microwave, satellite carriers and your local cell phone carrier. The FCC proposes that digital modulation be allowed for in the 2, 7 and 13 GHz bands for TV and the 950 MHz band for aural services. The FCC has also proposed a maximum allowed radiated power for all TV microwave services along with an easier method of computing reductions in power for short paths and the use of automatic power control of the transmitter from the receiver. TV auxiliary stations will have to follow the same rules for out of band emissions masks, and for interference to satellite services which may share the same band, as part 101 common carrier stations.

Another issue that the FCC visited was TV auxiliary stations within the UHF-TV broadcast band. The FCC allows TV station studio to transmitter links and relay stations to operate in the UHF-TV band on a secondary basis. The FCC is proposing a limit in radiated power, a beam width of 25 degrees or less and vertical polarization. New auxiliary stations will be limited to channels 14 to 51 due to the pending auctions of channels 60-69 and the further auctions of 52-59.

In the aural band of broadcast auxiliary frequencies, TV stations will no longer be allowed to use the 950 MHz band to carry the audio portion of their broadcasts. The FCC feels that with current methods of multiplexing audio on video, it is no longer necessary to allow such use. In the 150, 160, 450 and 455 MHz remote

pick-up bands, the FCC is proposing the bands use the same channel spacing of 6.25 MHz which is used by part 90 two-way services. Users will be able to stack up to eight 6.25 kHz channels to make up to a 50 KHz channel for wideband use.

With the advent of the Universal Licensing System being used for all wireless services outside of broadcast, the FCC wishes to amend part 74 rules for broadcast auxiliaries to follow the existing ULS rules concerning application procedures and construction timetables. The FCC is also proposing a more formalized coordination process to mirror the Part 101 rules and require all applicants to coordinate. The need for coordination of short term operation at large sporting events (The Super Bowl, etc.) and the political conventions was also addressed.

In response to a petition by the Association of Motion Picture and Television Producers, the FCC is proposing the use of low power TV transmitters to feed monitors to aid in making content, lighting and image framing decisions. These transmitters would operate on channels 8-12, 14-36 and 38-51 with 2 watts output with antenna limited to 10 meters and a 6 MHz bandwidth. Operating range would be limited to 300 meters and any full power station on the channel selected must be located 120 kilometers away. These units would have to be licensed and can only be used for movie or TV program production. Because of potential interference with wireless microphones, the use of these transmitters would not be allowed for news or special event programming, as broadcasters could use their normal microwave bands.

This notice was adopted on March 16, 2001 and released on March 20, 2001. Comments are due 30 days after publication in the FEDERAL REGISTER with replies 30 days later.

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FCC Rulemakings (continued)

**GN Docket No. 01-74; FCC 01-91
Reallocation and Service rules for
the 698-746 MHz Spectrum Band
(Television Channels 52-59)**

The FCC has taken steps to start the reallocation of TV channels 52 through 59 for other uses as required by Congress. Many of the issues are identical to the actions covered by rule makings for the reallocation of TV channels 60 through 69. One of the main issues is what to do with the TV stations that currently occupy the spectrum. As in the notices concerning channels 60-69, the FCC spent a lot of discussion to the stations on the band moving to within channels 2 through 51 to free up channels 52-59 and how to protect them from interference from the new services before they move.

The FCC did not give any specific uses for the band other than briefly mentioning 2.5G and 3G wireless services. They did ask if broadcast services could occupy the spectrum with other wireless services.

Other questions raised in the notice include whether the band should be left as a 48 MHz block or divided into 24, 12 or 6 MHz blocks, and if the license for each block should cover the whole country, be divided into large multistate licenses, or into more traditional smaller market areas that cover a number of counties.

This notice was adopted on March 16, 2001 and released on March 20, 2001. Comments are due on May 14, 2001 and replies are due on June 4, 2001.

**EB Docket No. 01-66; RM-9156; RM-9215; FCC 01-88
Amendment of Part 11 of the
Commission's Rules Regarding the**

Emergency Alert System

In response to petitions by the National Weather Service and the Society of Broadcast Engineers, the FCC has proposed a number of changes to the Emergency Alert System. Among the changes proposed are a number of changes in the event codes to better define what the warning is that is being transmitted, in the location codes to allow for coverage of marine areas, and to allow for county wide alerts. The SBE asked for cancellation codes to allow warnings to be canceled before they would have normally expired. The SBE also asked for a text transmission code to allow information to be transmitted and displayed as a character generator message.

Other proposed changes include allowing for reduction of required modulation levels from 80% to 50%, extending the window for relaying a monthly test from 15 minutes to 60 minutes, compatibility of EAS equipment with the National Weather Radio SAME transmissions, dropping requirements for international short-wave stations to have EAS equipment, and the removal of the rules concerning the defunct Emergency Action Notification Network. The FCC is also seeking comments on an SBE proposal to allow stations to take Presidential messages from non-EAS sources. Currently, stations must take Presidential voice messages from the EAS source even when it may have access to a radio or TV network feed. TV has video to audio sync problems with the audio and video coming from two different services, and this proposal would avoid the problem.

The action was taken on March 13, 2001 and released on March 20, 2001. Comments are due within 75 days after this notice is Published in the FEDERAL REGISTER, with due 30 days later.

FINAL RULEMAKING

**MM Docket No. 99-25; RM-9208;
RM-9242; FCC 01-100
Creation of a Low Power Radio
Service**

In this order, the FCC is amending it's rules to conform to an amendment to one of the 2001 appropriations bills. In this amendment, Congress ordered the FCC to require LPFM stations to provide 3rd adjacent protection to full power FM stations as well as FM translators. They also required the FCC to deny a license to anyone who has ever operated an unlicensed radio station. In this action, the FCC has published a new mileage separation table for LPFM stations with the 3rd adjacent separations listed.

The FCC also published a list of applications which do not meet the 3rd adjacent separation requirements. They will give these stations an opportunity to amend their applications. There are 14 stations with short spacings of 2 kilometers or less which will be able to file an application for a minor change of transmitter location in a 30 day window following the publishing of this notice in the FEDERAL REGISTER. There are about 660 stations with short spacings of more than 2 kilometers that will be given a special filing window to amend their applications after the five planned filing windows. There were 18 applications that were dismissed. These applications were from the first two filing windows. The FCC updated its frequency search programs to include the 3rd adjacent separations before the 3rd filing window. The 3rd filing window included applications from Wisconsin.

This notice was adopted on March 22, 2001 and released on April 2, 2001.

From FCC Releases (www.fcc.gov).

Thanks to WISC-TV for maintaining the web server for the Chapter 24 Web page!

Thanks to WKOW-TV for providing copying and folding facilities for the Chapter 24 newsletter!

NOTICE OF PROPOSED RULEMAKING FOR EAS

**Summary by Gary Timm,
Broadcast Chair, Wisconsin SECC**

Now that everyone has placed their vote for the new NOAA Weather Radio voice (go to www.nws.noaa.gov/nwr/voicesamples.htm if you haven't!), it's time to give the FCC your opinions on the proposed EAS rule changes. Leonard Charles has the official FCC NPRM posted on the SBE Chapter 24 website, available in WORD or PDF or just as a viewable/printable file at: www.sbe24.org/eas/fcc-eas/fnprm.html

The official notice of this rulemaking appeared in the Federal Register March 28, which lists the following: Comments are due June 11, 2001, and Reply Comments are due July 11, 2001. You can file comments via the FCC Electronic Comment Filing System (ECFS) at: www.fcc.gov/e-file/ecfs.html. To file via e-mail, or to send in paper comments, see details in the NPRM.

Although the Commission "seeks comment" on most proposals, they did come out in agreement with SBE on some proposals, and found other proposals "not in the public interest..." effectively killing them.

LOOKIN' GOOD

The FCC agrees with the SBE and NAB to increase the RMT relay time from 15 to 60 minutes. Also, the FCC agrees with the SBE that the EAS Code minimum modulation level permitted should be decreased from 80% to 50%.

NOGO

The Commission finds the following items not necessary, or not in the public interest... however, parties may comment if they so choose:

- NWS proposal to delete certain State and Local Event Codes.

- NWS proposal that EAS equipment should be compatible with non-EAS NWR-SAME applications.

- SBE proposal to add EVI to the National List, for immediate re-transmission.

- SBE proposal to require location code verification of tests and activations.

- SBE proposal to replace Monthly Test (RMT) with Quarterly Test (RQT).

- SBE proposal to make the Two-Tone Attention Signal optional.

- SBE proposal for the FCC to take steps to "coax" local participation.

It sounded like for any of these proposals to be re-considered, there would need to be numerous and convincing comments.

NEW CODES

In Appendix A, the FCC publishes its "Recommended Event Code List". It seems the Commission made its preferences known here by what it included, and what it did not.

MISCELLANEOUS

The FCC also is looking for comments on other items, such as logging requirements, an EAS text protocol, co-owned LP requirements, along with other issues.

If there was ever a "call to action" for anyone even remotely interested in any of these issues, this is it. Be heard! Comment now!

CHAPTER 24 SUSTAINING MEMBERS

LATEST RENEWALS:
maney-logic
Swiderski Electronics
WMTV-TV 15

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SBE Chapter 24 Newsletter
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FIRST CLASS MAIL

Newsletter edited on Pagemaker 5.0 by: Mike Norton
 Contributors this month: Vicki W. Kipp, Steve Paugh, Kevin Ruppert, Tom Smith, Gary Timm, and Tom Weeden.
 Thanks to Leonard Charles for his work on the Chapter 24 WWW page.

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APRIL MEETING and PROGRAM



**Society of Broadcast Engineers
CHAPTER 24 MADISON, WISCONSIN
Thursday, April 26, 2001**

Elections and UW Engineering Expo Wrap-up

Join us this month for the annual Chapter 24 elections. Ballots will be cast to choose next slate of officers. Also, we will be discussing the success of the UW College of Engineering EXPO with the public digital television demonstration by Chapter 24. We hope to see you there!

**Dutch Treat Dinner
at 5:30 PM**

**at J.T. Whitney's
674 S. Whitney Way**

**Meeting and Program
at 7:00 PM**

Visitors and guests are welcome at all of our SBE meetings!

2001 UPCOMING MEETING/PROGRAM DATES:

Day	Date	Program
Wednesday	May 23	EAS Update
Wednesday	June 20	Candelabra/DTV Update

Program Committee:	Denise Maney 277-8001	Steve Paugh 277-5139	Fred Sperry 264-9806	Steve Zimmerman 274-1234
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CANDIDATE BIOGRAPHIES

Tom Smith - Candidate for Chair

I have been a broadcast engineer since August of 1969 and have worked at a number of stations including KFIZ-TV in Fond Du Lac until it left the air in November of 1972. I then worked at WSAU-AM/TV and WIFC-FM in Wausau. I have spent the last 25 years at WHA-TV and am currently a Maintenance engineer and do some videotape editing. In 1982, I designed and built WSBW-FM in Sturgeon Bay. I also was a studio engineer for WLVE-FM which became WNLN and then WILV for six years from 1982. I have done contract work for several video production facilities.

I have been a member of the SBE since December of 1970 when I belonged to the Milwaukee Chapter. I have been a member of Chapter 24 since 1976 and have served as Secretary for one term in the mid 80's and been Vice-chairman for the last two years. I have served as Frequency Coordinator since 1992.

I completed a McGraw-Hill correspondence course in 1976 and have attended a number of schools and seminars including the Broadcasters Clinic for over the past 20 years.

I am married and have two daughters with the oldest starting grad school this summer and the youngest starting high school next year.

Vicki Kipp - Candidate for Vice Chair

My career in broadcasting began at community access stations WOW-Oregon and WYOU-Madison. While at the UW-Platteville, I was an on-air jock and member of the Technical Operations staff for WSUP 90.5 FM. I was the technical director for the 1996 Wisconsin Badger Camp TV Telethon. I graduated from UWP with a degree in Broadcast Technology Management: Engineering/Operations. I am employed by the Educational Communications Board (ECB) as a Media Technician 3. I perform technical operations at the Wisconsin Public Broadcasting network headend, the Telecommunications Operations Center (TOC).

Having joined the SBE in 1994, I hold the SBE certifications of CBTE and CBNT. In 1996, I was awarded the 'Best Technical Article or Program by a Student Member' for a newsletter article. As the Chapter 24 Special Events Coordinator, I've organized trips to see the Panasonic 720p HDTV NFL Production Truck at Lambeau Field and Resonance Research in Baraboo. Currently, I'm the Chapter 24 Secretary. I enjoy attending Chapter 24 meetings because they help me stay informed about our industry.

My hobbies include amateur radio, quilting, and cycling with my husband.

Tom Weeden - Candidate for Secretary

I'm a native of Beloit, Wisconsin, and earned a degree in Broadcast Engineering and Production from the University of Wisconsin-Platteville in 1979. I was an Operations Engineer at WTOV/Rockford IL from 1979-1980, then moved on to become Chief Engineer at WSWW AM-FM/Platteville from 1980-83. I left Wisconsin in 1983 and served as a Master Control Operator at Austin (TX) CableVision until 1986. In 1985 I also began to work part-time as Chief Engineer at KIXL/Austin TX. In 1986 my wife and I returned to Wisconsin, where I began work at WMTV as a Maintenance Engineer. In 1991 I was promoted to Chief Engineer.

I have been an amateur radio operator for 30 years, earning Extra Class in 1985. I also held an FCC First Class Radiotelephone Operator permit from 1976 until it was discontinued in 1985. In April 1986 I joined SBE, and joined Chapter 24 upon moving to Madison that year. I hold a CPBE certification and previously served as Chapter 24 secretary in 1990.

Stanley L. Scharch - Candidate for Treasurer

My career in broadcasting began in 1980 as a part time operator for WIBU in Poynette, Wisconsin. After obtaining a required FCC First Class Radiotelephone Operators License, I moved to WISM in Madison as an operator later that same year. In 1986 I left WISM for a full time position on the Engineering staff at WISC-TV where I presently serve as Communications Systems Administrator.

I have been a member of SBE Chapter 24 since 1986. I am currently certified as Senior Broadcast Engineer - Television. It has been my pleasure to serve Chapter 24 as Sustaining Membership Chair from 1991 to 1994 and then as Treasurer since 1994. I seek to continue my involvement in this excellent professional organization.

2001 SBE Chapter 24 Election Ballot

You must be a current member of SBE Chapter 24 to be eligible to vote.

Please include your SBE member number: _____
Voter names will not be identified.

VOTE FOR ONE FOR EACH OFFICE. MARK AN "X" NEXT TO YOUR SELECTION.

CHAIRPERSON

_____ Tom Smith

(write-in candidate)

VICE CHAIR

_____ Vicki Kipp

(write-in candidate)

SECRETARY

_____ Tom Weeden

(write-in candidate)

TREASURER

_____ Stanley L. Scharch

(write-in candidate)

Elections will take place during the April chapter meeting. If you cannot attend that meeting, you may send your completed ballot to the address below. Please vote only once.

Steve Paugh
c/o WISC-TV Engineering
7025 Raymond Rd.
Madison, WI 53719

All ballots must be received by 5:00 p.m. Tuesday, May 1st.