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WSKG PUBLIC TELECOMMUNICATIONS COUNCIL
BINGHAMTON, NEW YORK

PERMITTEE OF

WSKG-DT, DTV CHANNEL 42

BINGHAMTON, NEW YORK

FACILITY ID # 44034

FCC FILE No. BPEDT-20000307AAB

MINOR CHANGE

APPLICATION TO MODIFY EXISTING

CONSTRUCTION PERMIT

ENGINEERING EXHIBIT EE-1

Larry H. Will, P.E.
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DTV CP MOD APPLICATION

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WSKG PUBLIC TELECOMMUNICATIONS COUNCIL
BINGHAMTON, NEW YORK

DECLARATION OF LARRY H. WILL

Larry H. Will declares and says:

That he prepared the attached engineering exhibit on behalf of WSKG PUBLIC TELECOMMUNICATIONS COUNCIL, permittee of Non-commercial Educational DTV station WSKG-DT 46 at Binghamton, New York, and applicant for a modification of Construction Permit for WSKG-DT.

That he has been involved in radio and television broadcast engineering for over 35 years, and that his qualifications are a matter of record with the Federal Communications Commission.

That he is a Registered Professional Engineer in Pennsylvania and New Jersey.

That all statements contained within this exhibit are true and accurate to the best of his knowledge and belief, and as to such statements made of belief, they are believed to be true, except for information for which the Federal Communications Commission takes official notice.

____(s) Larry H. Will___
Larry H. Will, P.E.
1055 Powderhorn Drive
Glen Mills, PA 19342
(610) 399-1926

Date: December 10, 2002

WSKG PUBLIC TELECOMMUNICATIONS COUNCIL
BINGHAMTON, NEW YORK

PERMITTEE OF WSKG -DT CHANNEL 42

BINGHAMTON, NEW YORK

FCC FILE No. BPEDT-20000307AAB

ENGINEERING EXHIBIT EE-1

1: BACKGROUND

WSKG PUBLIC TELECOMMUNICATIONS COUNCIL has an outstanding Construction Permit for WSKG-DT on Channel 42 in Binghamton, NY (File No. BPEDT-20000307AAB). The instant minor application is to modify the facilities for WSKG-DT to specify a new tower nearby to the presently authorized CP location. This tower will support the facilities of WSKG-DT, WSKG-TV, and WSKG-FM. The DTV facility requested herein complies with the requirements of Sections 73.622 and 73.623 of the FCC Rules, and all items on the certification checklist are answered in the affirmative.

2. FACILITIES REQUESTED

The instant minor application requests a modification of the CP facilities of WSKG-DT to 50 kW non-directional with horizontal polarization utilizing a Dielectric (TCI) Model 888-24 O8 transmitting antenna with 0.75 degrees of electrical beam tilt. Also we proposed to change the transmitting antenna supporting structure, change the C/R AMSL to 803 meters, the antenna C/R AGL to 282 meters, and the HAAT to 392 408 meters. The proposed DTV Channel 42 antenna elevation parameters are included as Figures 2, 2A and Table 2. Distances to the 41 and 48 (F50,90) contours were calculated using the procedures in 73.625(b)(1). HAAT was determined using the EDX 3 second database and routines. A DTV study utilizing the V-Soft Sun DTV workstation showed

that there is no prohibited interference to any station or allocation above di-minimis levels caused by the facilities proposed herein.

Figure 4 shows the WSKG-DT present and proposed 41 and 48 dBu, F(50,90) DTV service contours.

3. ENVIRONMENTAL CONSIDERATIONS

The instant application is excluded under 1.1306. Using the procedures outlined in OET Bulletin 65, Edition 97-01 and specifically Equation 10, I have evaluated the RFR energy from the antenna system of proposed WSKG -DT as follows:

The proposed WSKG -DT is one of several TV and FM broadcast antennas at the station location required to be considered by 47 CFR 1.1307(b).

WSKG-DT

WSKG -DT, Channel 42, is proposing to utilize an average ERP of 50 kilowatts with horizontal polarization. The WSKG -DT transmitting antenna is also a medium gain unit with an elevation power gain of 24X top mounted with a base approximately 276 meters up the tower. Because of the elevation gain, the ERP at angles departing +/- 10 degrees from the horizon is attenuated by a minimum of 10 dB. For occupational/controlled environment (2.14 mW/cm^2 at 641 MHz) and utilizing Equation 10 of OET Bulletin 65 and allowing for 10 dB at steep angles, the required physical separation is 8.8 meters. For general population/uncontrolled environment (0.43 mW/cm^2), the required physical spacing is 19.7 meters. Since the bottom of the antenna is approximately 276 meters above the ground, the height of the structure limits the possible excessive radiation values to at least 256.3 meters above the ground. Again using Equation 10 of OET Bulletin 65, and using the total average RF power corrected for steep angles, the *actual RF level at 2 meters above the ground from WSKG-DT is 2.2 uW/cm^2 or 0.5 % of the total allowable at 641 MHz.*

Therefore the total calculated RFR levels at the base of the proposed tower contributed by the WSKG-DT proposed operation will *be no more than 0.5 %* of the total and well below the allowable limits of OET Bulletin 65 for the general public/uncontrolled

environment. The addition of WSKG-DT contributes less than 1 % of the total RFR energy at ground level at this multiple use site.

WSKG-TV

WSKG -TV, Channel 46, is proposing to utilize a visual peak ERP of 490 kilowatts (338 kW total average power) with horizontal polarization. The WSKG -TV transmitting antenna is a medium gain unit with an elevation power gain of 24X top mounted with a base approximately 276 meters up the tower. Because of the elevation gain, the ERP at angles departing +/- 10 degrees from the horizon is attenuated by a minimum of 20 dB. For occupational/controlled environment (2.21 mW/cm^2 at 663 MHz) and utilizing Equation 10 of OET Bulletin 65 and allowing for 10 dB at steep angles, the required physical separation is 22.5 meters. For general population/uncontrolled environment (0.442 mW/cm^2), the required physical spacing is 50.3 meters. Since the bottom of the antenna is approximately 276 meters above the ground, the height of the structure limits the possible excessive radiation values to at least 225.7 meters above the ground. Again using Equation 10 of OET Bulletin 65, and using the total average RF power corrected for steep angles, the *actual RF level at 2 meters above the ground from WSKG-TV is 15.0 uW/cm^2 or 3.4 % of the total allowable at 663 Mhz.*.

Therefore the total calculated RFR levels at the base of the proposed tower contributed by the WSKG-DT proposed operation, will *be no more than 3.4 %* of the total for the site and well below the allowable limits of OET Bulletin 65 for the general public/uncontrolled environment. WSKG-TV contributes less than 5 % of the total RFR energy at ground level at this multiple use site.

WSKG-FM

WSKG -FM, Channel 207, is proposing to utilize an average ERP of 11.4 kilowatts with circular polarization. The WSKG-FM transmitting antenna is a 4 bay full

wavelength spaced unit with an elevation power gain of 2.1x side mounted with a base approximately 189 meters up the tower. Because of the elevation gain, the ERP at angles departing +/- 30 degrees from the horizon is attenuated by a minimum of 6 dB. For occupational/controlled environment (1.0 mW/cm^2 at 89 MHz) and utilizing Equation 10 of OET Bulletin 65 and allowing for 6 dB at steep angles, the required physical separation is 13.9 meters. For general population/uncontrolled environment (0.20 mW/cm^2), the required physical spacing is 30.9 meters. Since the bottom of the antenna is approximately 189 meters above the ground, the height of the structure limits the possible excessive radiation values to at least 158.1 meters above the ground. Again using Equation 10 of OET Bulletin 65, and using the total average RF power corrected for steep angles, the *actual RF level at 2 meters above the ground from WSKG-FM is 5.3 uW/cm^2 or 2.7 % of the total allowable at 89 Mhz.* The addition of WSKG-FM contributes less than 3 % of the total RFR energy at ground level at this multiple use site.

Therefore the total calculated RFR levels at the base of the tower contributed by the WSKG-FM proposed operation, will *be below 2.7 %* allowable or *5.3 uW/cm^2*. *The total RFR energy form all three stations is 26.0* uW/cm^2 and well below the allowable limits of OET Bulletin 65 for the general public/uncontrolled environment.

CONCLUSIONS ON RFR ANALYSIS

Based on the on the calculations included herein, I believe that the proposed tower site will be in compliance with 47 CFR 1.1307 and FCC OET Bulletin 65 with the inclusion of the proposed WSKG-DT.

The antenna supporting structure is enclosed by a chain-link fence to prevent unauthorized access. As a precaution to employees, a suitable sign is posted at the base of the tower alerting maintenance personnel to the presence of RFR energy so that appropriate action can be taken when access on the tower is required.

Also, at present, all broadcast transmitters co-located on the site are owned by the applicant. The applicant further states that he is a party to an electromagnetic radiation abatement plan to educate employees and workers as to the potential hazards when

working on the tower. During periods of maintenance where workers on the tower could be exposed to excessive levels of RFR energy, any transmitting system that could pose a hazard will be either turned off or reduced in power to insure that workers are not subject to excessive values of non-ionizing radiation.

With these procedures in place, we believe the proposed WSKG -DT operation is in compliance with the RFR exposure requirements of 47 CFR 1.1307(b).

4: NEARBY AM FACILITY

WNBF(AM), 1290 kHz, 9.3 kW U, 5 kW, DA-N is located within 0.5 km of the proposed WSKG-TV facility. WSKG PUBLIC TELECOMMUNICATIONS COUNCIL, licensee of WSKG-TV does not own the proposed new tower. However, the tower owner is working with the AM station on taking steps to insure that the installation of the new tower does not result in prohibited changes to the operation of WNBF(AM). WSKG-TV will adequately bond the new transmission line to the tower at sufficient intervals to insure that no low frequency resonant conditions are created which could cause reradiation of the WNBF(AM) signal.

5. BLANKETING INTERFERENCE

The area surrounding the proposed site is rural residential, however due to the narrow elevation beamwidth of the proposed WSKG-DT antenna, no blanketing interference is anticipated. However, the applicant will investigate and cure any complaints reported within the blanketing area.

There is one FM broadcast facility and one NTSC facility co-located with the proposed WSKG -DT. The facilities are WSKG-FM, 89.3 MHz and WSKG-TV, Channel 46. No intermodulation interference is expected.

6. FAA NOTIFICATION

The approved FAA Study Number is 99-AEA-1771-OE. The FCC Registration Number is 1236974.

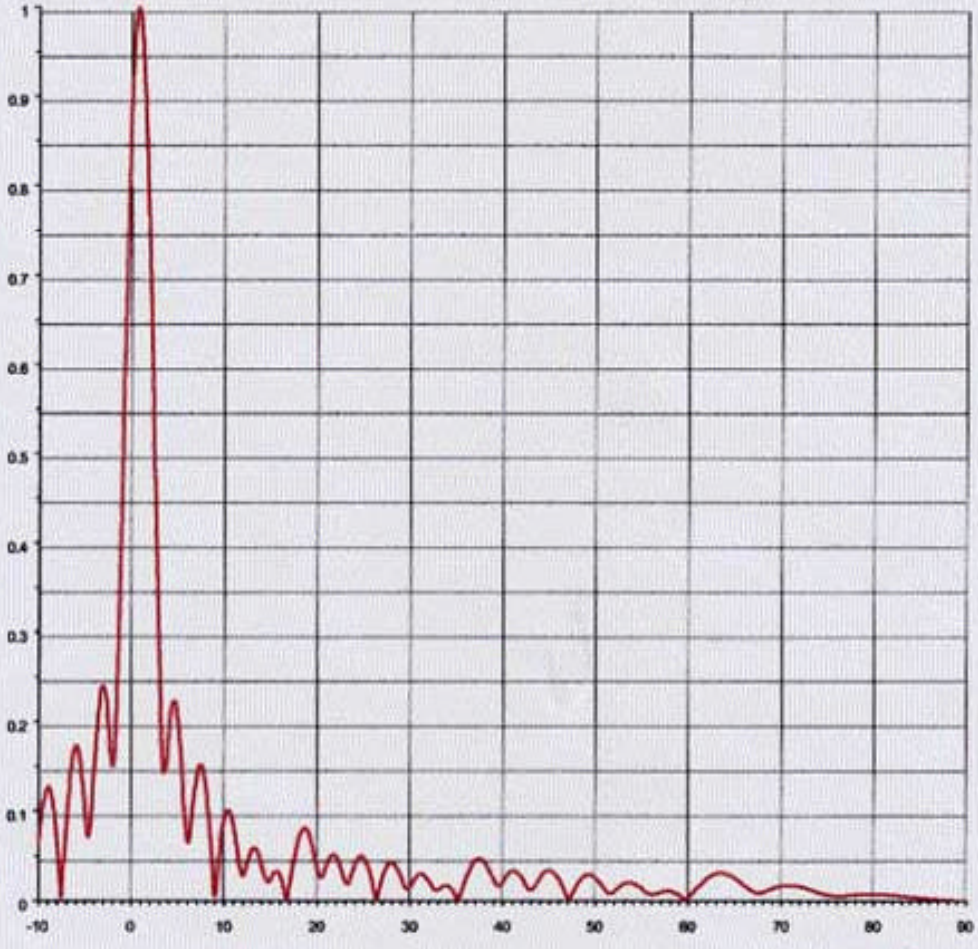
Dielectric

Proposal Number	DCA-9854	Revision:	1
Date	10-Jul-02		
Call Letters	WSKG-DT	Channel	42
Location	Binghamton, NY		
Customer	APBS		
Antenna Type	888-24 O8		

FIGURE 2

ELEVATION PATTERN

RMS Gain at Main Lobe	21.60 (13.34 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	17.10 (12.33 dB)	Frequency	641.00 MHz
Calculated / Measured	Calculated	Drawing #	24I216075-90



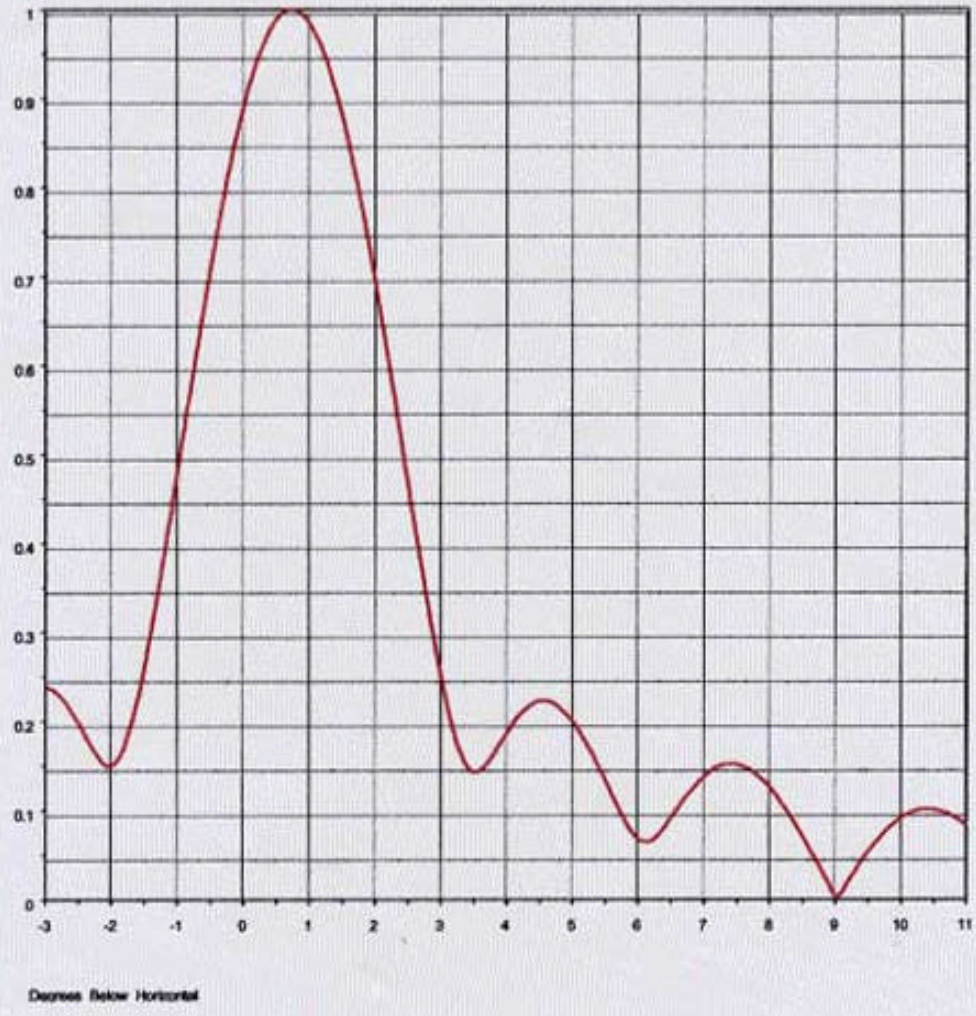
Dielectric

Proposal Number	DCA-9854	Revision:	1
Date	10-Jul-02		
Call Letters	WSKG-DT	Channel	42
Location	Binghamton, NY		
Customer	APBS		
Antenna Type	888-24 O8		

FIGURE 2A

ELEVATION PATTERN

RMS Gain at Main Lobe	21.60 (13.34 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	17.10 (12.33 dB)	Frequency	641.00 MHz
Calculated / Measured	Calculated	Drawing #	24I216075



WSKG PUBLIC TELECOMMUNICATIONS COUNCIL

WSKGDT BINGHAMTON NY

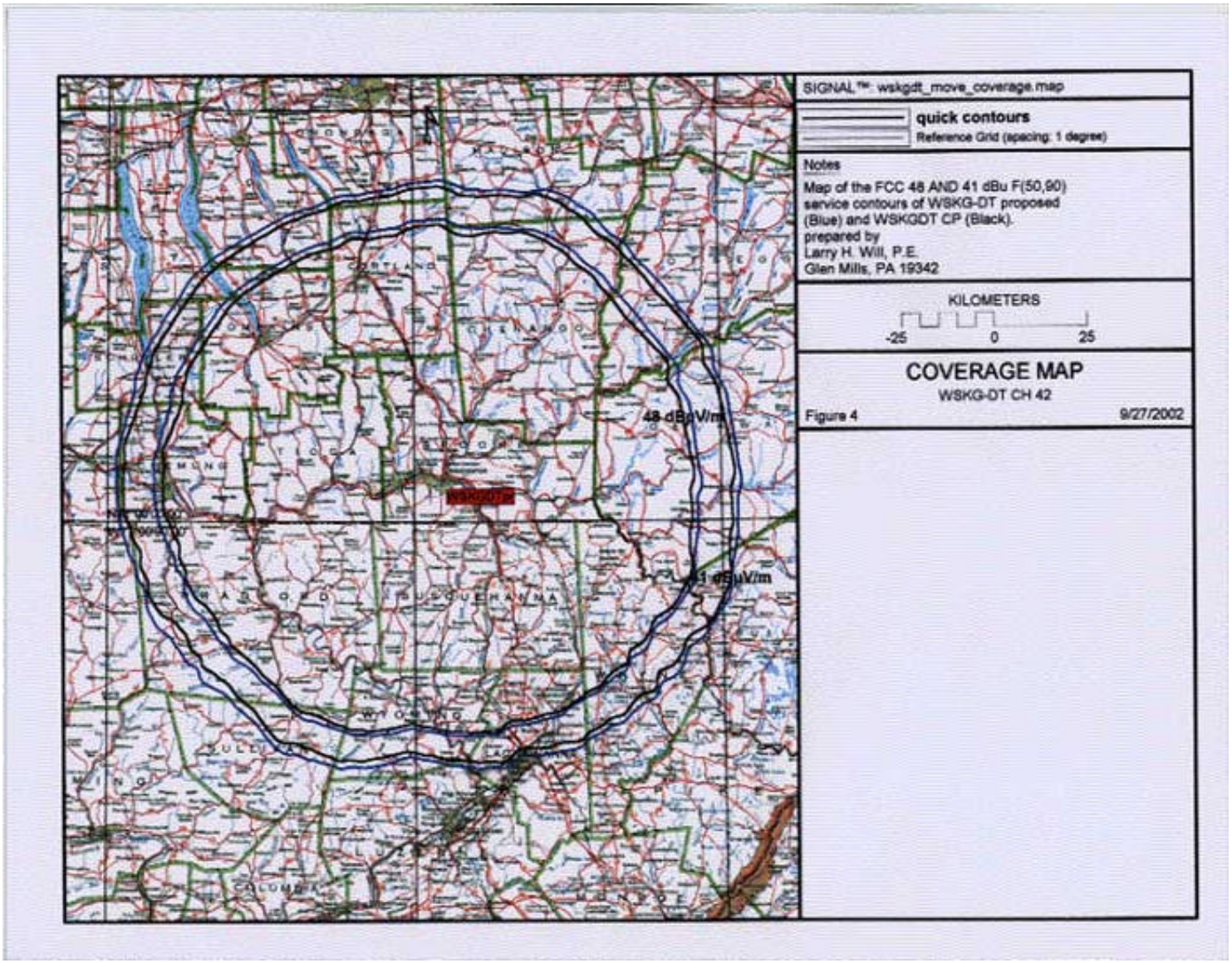
TABLE 2

Dielectric 888-24 C8
ELEVATION PATTERN
CH 42

Elevation

Angle	Field	ERP (kW)	ERP (dBk)
3.00	0.239	2.86	4.558
2.50	0.198	1.96	2.923
2.00	0.150	1.13	0.512
1.50	0.314	4.93	6.928
1.00	0.481	11.57	10.633
0.50	0.623	19.41	12.879
0.00	0.890	39.61	15.978
-0.25	0.950	45.13	16.544
-0.50	0.987	48.71	16.876
-0.75	1.000	50.00	16.990
-1.00	0.985	48.51	16.858
-1.25	0.942	44.37	16.471
-1.50	0.877	38.46	15.850
-1.75	0.793	31.44	14.975
-2.00	0.693	24.01	13.804
-2.50	0.467	10.90	10.376
-3.00	0.252	3.18	5.018
-3.50	0.147	1.08	0.336
-4.00	0.187	1.75	2.427
-4.50	0.221	2.44	3.878
-5.00	0.200	2.00	3.010
-5.50	0.133	0.88	-0.533
-6.00	0.068	0.23	-6.360
-6.50	0.090	0.41	-3.925
-7.00	0.138	0.95	-0.213
-7.50	0.151	1.14	0.569
-8.00	0.126	0.79	-1.003
-8.50	0.071	0.25	-5.985
-9.00	0.005	0.00	-29.031
-9.50	0.054	0.15	-8.362
-10.00	0.086	0.37	-4.320
-10.50	0.100	0.50	-3.010
-11.00	0.089	0.40	-4.022

ERP= 50.0 kW
CALL WSKG-DT


SIGNAL™: wskgdt_move_coverage.map
quick contours
Reference Grid (spacing: 1 degree)
Notes
Map of the FCC 48 AND 41 dBu F(50,90) service contours of WSKG-DT proposed (Blue) and WSKGDT CP (Black).
prepared by
Larry H. Will, P.E.
Glen Mills, PA 19342
KILOMETERS
-25
0
25
COVERAGE MAP
WSKG-DT CH 42
Figure 4
9/27/2002
48 dBuV/m
41 dBuV/m
WSKGDT-CP