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NORTHEASTERN PENNSYLVANIA TV ASSOCIATION

LICENSEE OF WVIA-TV/DT

SCRANTON, PENNSYLVANIA

FAC ID# 47929

**FCC FILE #s BLEDT-20010109AAP
BPEDT-20080619ADK
W52DX – NTSC STA (WAYMART)**

APPLICATION FOR A REPLACEMENT TRANSLATOR

ON CH 44 – WAYMART, PA

(MINOR CHANGE)

ENGINEERING EXHIBIT 11

April 30, 2009

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EXHIBIT 11

**REASON FOR SERVICE NEED, FACILITIES PROPOSED, AND REQUEST FOR
WAIVER REGARDING 41 dBu COVERAGE**

REASON FOR SERVICE NEED AND FACILITIES REQUESTED

NORTHEASTERN PENNSYLVANIA TV ASSOCIATION, is filing this application to request authority to construct a “replacement translator” on Channel 44 in Waymart, Pennsylvania for use with WVIA-DT, Channel 41, Scranton, PA. As outlined in more detail below, the purpose of this application is to replace an almost 5-year-old analog STA, (BSTA-20040524APB) with temporary call sign W52DX¹, with a digital replacement translator on in-core channel 44. WVIA-TV/DT is one of several Scranton market stations that has been operating under STA since September 2004 in Waymart, PA as a result of severe interference to the reception of WVIA-TV from the slowly rotating blades of the Waymart Wind Farm, L.P. power generation system in the Moosic mountains near the town of Waymart.

¹ A copy of this STA is included in Appendix 1.

W52DX PRESENT OPERATION

W52DX is authorized an ERP of 3 kW utilizing a directional antenna oriented to 130 degrees True. As shown in Figure 1, the present 64 dBu F(50,50) coverage of W52DX extends slightly beyond the presently authorized WVIA-TV, Channel 44 64 dBu F(50,50) service contour and encompasses a small area of 138.8 km². This long time operation under STA has provided reliable service to residents of northeastern Pennsylvania without the blade modulation seen on the parent signal.

CHANNEL 44 REPLACEMENT TRANSLATOR PROPOSED OPERATION

There is reason to believe, based on the nature of the 8-VSB signal, that the disturbance to digital off-air reception from the wind farm turbine blades will be at least as objectionable and more than likely result in much greater interference². The digital replacement operation proposed herein will effectively provide equivalent service to off-air viewers in the immediate area with the digital signal of WVIA-DT after the shutdown of WVIA-TV on June 12, 2009. In addition, by making this post transition operation a replacement translator, it will tie its operation to that of the parent station as anticipated in MM Docket 08-253³. Simultaneously with this application, an application for an STA has also been filed.

A complete engineering study was performed by MSW, Incorporated and this Exhibit spells out the complete details showing no prohibited interference to any other stations as required by the recently proposed Replacement Translator Rules. This replacement translator is

² The 8VSB transmission system adopted for use in the US has a significant susceptibility to signal variations when there is motion in the propagation path.

³ See "Amendment of Parts 73 and 74 of the Commission's Rules to Establish Rules for Replacement Digital Low Power Television Translator Stations", MM Docket No. 08-253, Para IIIB.

in a very rugged area of northeastern Pennsylvania, which limits the range of any translator in practice.

PROPOSED REPLACEMENT DTV TRANSLATOR CONSOLIDATED ENGINEERING STUDY

Specifically we are proposing to utilize a digital ERP of 0.300 kilowatts (H) at the presently operating site of W52DX and with the presently authorized Kathrein K723147 custom multi-panel system with 2 sets of panels oriented to 130 degrees true with one panel set oriented to 95 degrees True and the second set to 165 degrees True. The study completed by MSW is over 900 pages in length and therefore is not included herein. This study showed that no prohibited interference will occur to any authorized or pending full service and LPTV analog or digital station as required by 74.792 and 74.793⁴. A copy of the study results can be supplied the staff, if needed.

⁴ The study was actually performed at 0.323 kW, greater power than requested here.

**Engineering Statement
In Support of
New Replacement Digital Television Translator
Channel 44
At
Waymart, Pennsylvania
Prepared For
WVIA-DT
Scranton, PA.**

March 10, 2009

Prepared By:



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**Request for Replacement Digital Television Translator Station
Channel 44
At Waymart, Pennsylvania
March 10, 2009**

Waymart Wind Farm, LLC (Waymart), is the owner and operator of a wind power generation facility in Wayne County, Pennsylvania. Waymart has constructed and put into operation 43 Wind Turbines along the Moosic Mountains near Waymart, Pennsylvania in Clinton Township within Wayne County, Pennsylvania. Waymart Wind Farm through the various Full Power Television Station licensees requested and was granted Special Temporary Authority (STA) to build and operate a seven channel analog television translator system in 2004 to mitigate the television reception problems of the residents in Clinton Township, Pennsylvania.

This statement and its associated exhibits has been prepared to support a request for a Replacement Digital Television Translator Station to construct and operate a system of seven digital television translator stations at Waymart, Pennsylvania. This system will replace the existing analog translator system currently in operation under Special Temporary Authority (STA).

As each Full Power Digital Television Station that is to be carried on the translator system is independently owned and licensed. Therefore, each translator station and its associated licensee are submitting individual FCC form 346 applications. In the instant application, WVIA-DT (Facility ID # 47929), licensee Northeastern Pennsylvania Television Association requests authority from the Commission to construct and operate a Replacement Digital Television Translator on channel 44.

Waymart currently operates a seven channel analog translator system under "Special Temporary Authority" (STA). This request seeks to convert the existing analog translators to digital and to license the operation of these translators under the FCC's Replacement Digital Television Translator service to each station's associated Full Power Digital Television Station. Thus, eliminating the need for extension requests of its Analog Television Translator STA's. Waymart plans to "flash-cut" the existing equipment from analog operation to digital operation once authority has been granted by the FCC to do so. The Station's and Waymart wish to convert the translators to Digital Service prior to the June, 2009 cessation of full power analog television.

As Waymart informed the Commission in its previous analog television translator request, reception of television signals in the Clinton Township area is impaired due to the operation of the wind turbines. As noted in its analog translator request, without the translators provided by the Waymart Wind Farm, over-the-air reception of analog and digital signals would be problematic. Consequently, with the end of analog television, the need to convert these translator stations to digital operation is essential.

Without the conversion of this system from analog to digital operation, the residents of Clinton Township will be without over-the-air reception and this condition will create a new “White Space”. Thus, WVIA-DT and Waymart believe that this request is consistent with the Commission’s intent to provide digital service to areas that will lose analog service at the cessation of analog. Further, WVIA-DT and Waymart believe that their request is in the Public Interest and WVIA-DT has agreed to allow carriage of their programs on the requested replacement digital television translator.

The town of Waymart, Pennsylvania and those areas within Clinton Township are terrain shielded from the transmission facility of WVIA-DT. Therefore, these areas would likely not have reliable off-air digital television reception of WVIA-DT even without the impairment created by the wind turbines which block the reception at Waymart.

However, this situation allows the use of terrain shielding to protect other stations and users from interference by the proposed facilities. Longley-Rice studies utilizing the OET-69 methodology were undertaken to determine the available Post-Transition DTV channels to be used at Waymart. By utilizing a directional antenna and limiting the area served by the facility, we believe that this facility may be authorized and provide much-needed digital television service to the residents of Clinton Township without exceeding the *de minimus* interference limits to other stations.

Facility Description:

The technical parameters for the proposed Replacement Digital Television Translator operation at Waymart, PA are summarized in the “Tech Box” portions of the FCC Form 346, Section III. The facility is proposed to operate on channel 44 with a directional antenna and a maximum effective radiated power (ERP) of 300 Watts, with an antenna height above average terrain (HAAT) of 317 meters.

It is proposed to operate Replacement Digital Television Translators on the seven UHF channels as identified below:

Call Sign / Digital Channel / Network	Proposed DTV Translator Output Channel
WNEP DT / 50* / ABC	22
WYOU DT / 13 / CBS	25
WBRE DT / 11 / NBC	28
WSWB DT / 31 / CW	36
WVIA / 41 / PBS	44
WOLF / 45 / Fox	47
WQPX / 32 / Ion	49*

* WNEP-DT was recently granted a Petition for Rulemaking to change its post-transition DTV channel from 49 to 50.

The instant application requests authority for operation on channel 44 for WVIA-DT. The Replacement Digital Television Translator facility will operate with a side-mounted two-panel array on an existing 70-foot (21.3 Meters) tower. This tower is located adjacent to wind turbine # 5 on the Waymart Wind Farm site. Since the antenna structure's overall height above ground is 21.3 meters, and (according to the Commission's TOWAIR computer program) there are no landing areas within 8km, the structure is exempt from notification to the FAA under section 17.7 of the Commission's Rules, and Antenna Structure Registration is not believed to be necessary.

The adjacent existing wind turbine structure is approximately 300 feet (91.5 meters) in height to the tip of the blade. The wind turbines are lighted in accordance with FAA rules and were found to pose no hazard to air navigation when the wind farm was constructed. Thus, the visual impact of the 70 foot existing tower structure is not significant and there should be no impact with regard to FAA.

The transmitting antenna will be a Kathrein Model K723147 two-panel array, which is directional in the horizontal plane. No beam tilt is proposed. The two panels will be oriented at 95 degrees and 165 degrees to accomplish the pattern proposed herein. The transmitters of the stations will be combined using a channel combiner in the transmitter building and the output of the channel combiner will feed the antenna. The maximum ERP (Effective Radiated Power) will be 300 watts, horizontally polarized on each channel. The antenna's horizontal plane pattern, expressed in terms of relative field is supplied in Figure 1. These values should be rotated such that the main lobe (0 degrees) is oriented at 130 degrees relative to True North. Figure 2 provides relative field values for the vertical plane (Elevation) pattern for the proposed antenna. The antenna will be installed in accordance with the manufacturer's instructions. A competent technical representative of the applicant will supervise the installation of the antenna on site.

As depicted in Figure 3, the service contour (51.0 dBu) of the facility does cover the principal community of Waymart, Pennsylvania.

Allocation Situation:

A study of channel 44 for the post-transition DTV channel to be utilized for the facility is attached. The study was conducted using the FCC's OET-69 Longley-Rice methodology. The study was conducted using 1km cell size. The study was conducted using the "simple" emission mask. A copy of the study is attached at the end of this Statement.

The station is clear of FCC Monitoring facilities, and is also no closer than 9km to any authorized AM station. The nearest AM site is WKJN at 9.66km distant. No adverse impact to WKJN is expected.

Interference Acceptance:

The applicant agrees, to the extent required, to accept any interference to its proposed operation.

Environmental Considerations:

Under section 1.1306 of the Commission's Rules, an environmental impact assessment is not required for this application. The proposal does not specify a location in a designated wilderness area, a wildlife preserve, areas of critical habitats, historic districts Indian Religious site, or flood plain, and will not involve significant change in surface features. Additionally, the tower will not be equipped with any lighting.

The proposed operation was evaluated for human exposure to radiofrequency (RF) energy using the procedures outlined in the Commission's OET Bulletin 65. The proposed antenna will be installed such that its center of radiation is approximately 20 meters above ground level. An ERP of approximately 0.3 kilowatts, horizontally polarized, will be employed. According to the elevation pattern data provided by the antenna manufacturer, the proposed antenna will have a relative field of less than 12 percent from 14 to 30 degrees below the horizontal plane (below the antenna). Thus, the value of 12 percent is used for this calculation. The "uncontrolled/general population" limited specified in section 1.1310 for channel 44 (Center Frequency 653 MHz) is 435.3 microwatts per square centimeter.

Using formulas from OET-65, Supplement A, the proposed facility would contribute a power density of 0.445 microwatts per square centimeter at 2 meters above the ground level, or 0.1023% of the uncontrolled/general population limit. Since this is a multiple transmitter location, the entire contribution of all seven emitters should be considered. In this case, it is estimated that the total contribution of all seven emitters would only contribute approximately 3.118 microwatts per square centimeter or less than 0.898% of the uncontrolled/general population limit at the lowest frequency. At locations away from the base of the tower and building the calculated power density is even lower due to the increasing distance away from the antenna. No other non-excluded emitters are located within 2km of the proposed site.

Additionally, the applicant will restrict access to the building and tower areas to prevent unauthorized personnel from accessing the antenna. Further, the applicant will conduct measurements of RF Exposure levels following construction to ensure compliance with applicable RFR standards. The applicant will also develop an RF Exposure safety program for all workers that will be accessing the site. Any time workers will be working on the tower the applicant will cease operations of the transmitters.

Based upon the proceeding, it is believed that this instant proposal may be categorically excluded from environmental processing under section 1.1306 of the Commission's Rules. Therefore, preparation of an Environmental Assessment is not required.

Certification:

The undersigned hereby certifies that the foregoing statement was prepared by him or under his direction, and that it is true and correct to the best of his knowledge and belief. Mr. Wallace is a principal in the firm of Meintel, Sgrignoli, & Wallace, LLC and has submitted numerous engineering exhibits to various governmental authorities and the Federal Communications Commission. His qualifications are a matter of record with that agency.

This Statement Prepared on this 10th day of March, 2009.

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FIGURE 1**ANTENNA AZIMUTH PATTERN**
Model: KATHREIN K723147

Horizontal Antenna Pattern used for the OET -69 Studies. The relative field values are at 10 degree increments starting at 0 degrees. **In the studies this pattern was rotated 130 degrees.**

Degrees	Relative Field
0	1.000
10	0.983
20	0.939
30	0.850
40	0.745
50	0.634
60	0.521
70	0.405
80	0.296
90	0.223
100	0.165
110	0.101
120	0.049
130	0.023
140	0.019
150	0.028
160	0.045
170	0.064
180	0.077
190	0.071
200	0.051
210	0.028
220	0.017
230	0.035
240	0.080
250	0.125
260	0.168
270	0.224
280	0.304
290	0.409
300	0.525
310	0.640
320	0.750
330	0.849
340	0.932
350	0.987

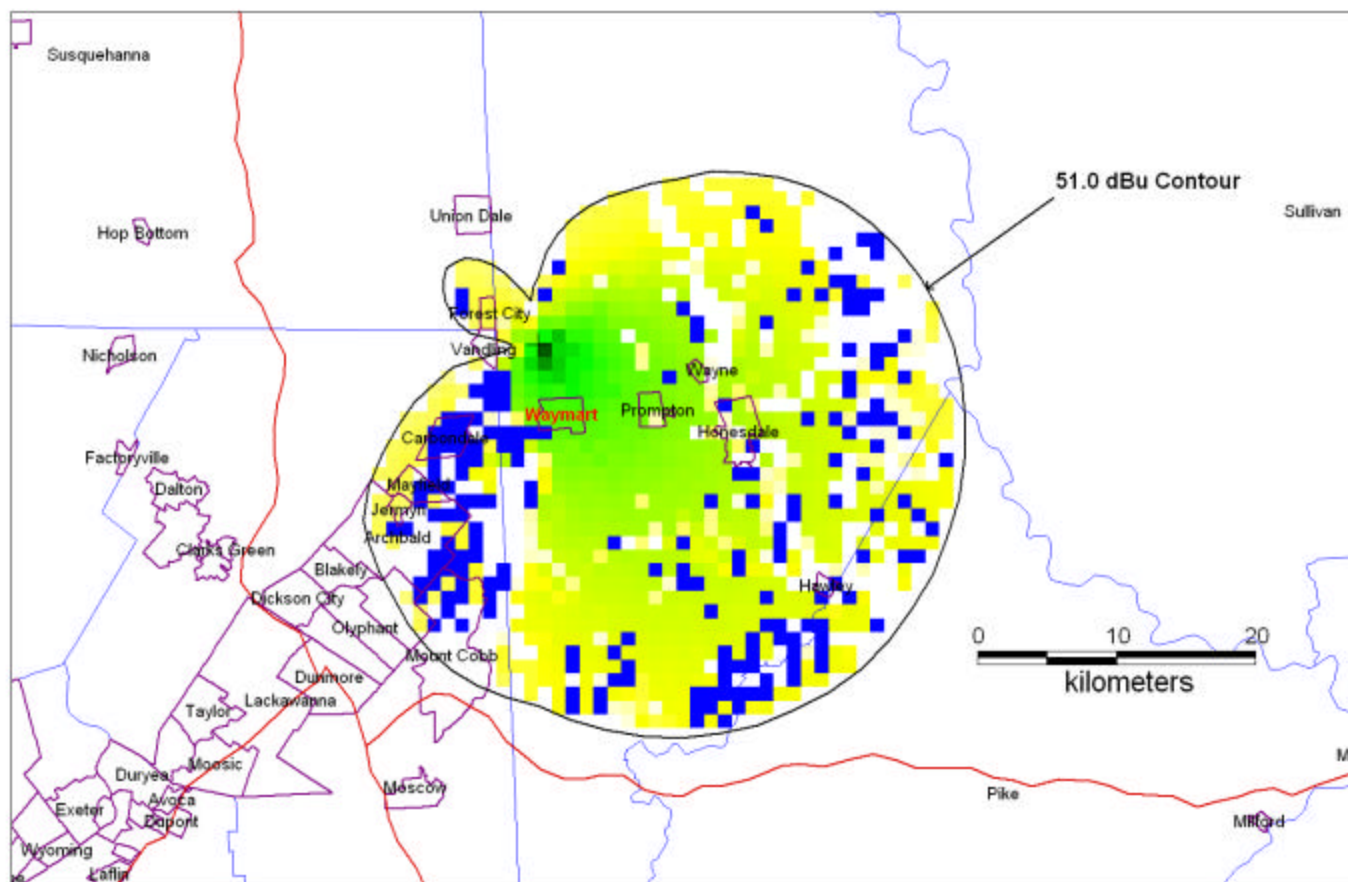
FIGURE 2**ANTENNA ELEVATION PATTERN****Model: KATHREIN K723147**

Vertical Antenna Pattern used for OET-69 Studies. Column 1 is the depression angle and column 2 is relative field value. 16 values (2 degree intervals).

Degrees	Relative Field
0.00	0.967
2.00	0.964
4.00	0.717
6.00	0.355
8.00	0.099
10.00	0.178
12.00	0.174
14.00	0.102
16.00	0.096
18.00	0.093
20.00	0.032
22.00	0.067
24.00	0.121
26.00	0.114
28.00	0.064
30.00	0.047

FIGURE 3

Coverage Map of Proposed Channel 44 Facility
Replacement Digital Television Translator
Waymart, PA.



Waymart Translator on Channel 44 @ 300 W ERP
 Post-transition Predicted Service

Blue indicates areas of predicted DTV interference
 Red indicates areas of predicted analog interference

Green indicates high field strength fading
 to yellow and then to white at the noise
 limited threshold

Proposed Channel 44 Digital Replacement Television Translator at Waymart, Pennsylvania

REQUEST FOR A WAIVER OF PROPOSED 74.787 REGARDING THE 41 dBu COVERAGE OUTSIDE THE PARENT STATION

As shown in Figure 4, the proposed operation results in a calculated slight overlap of the NEW Channel 44 “replacement translator” as compared to that of the main station, WVIA-DT, Channel 41 as authorized by BPEDT-20080619ADK. The Commission has stated that it will consider waiver requests for small amounts of overlap under certain circumstances. A review of Figure 3 OF THE MSW Study above shows that the actual coverage as calculated by Longley-Rice is indicating the practical end of useable signal strength from the proposed Channel 44 replacement translator towards the area where the 41 dBu contour overlap occurs. This is due to the fact that the 41 dBu calculations only use terrain from 3.2 to 16 kilometers and that area towards the east from the Moosic Mountain transmitter site is a wide valley. To the east, more ridges of the Pennsylvania Mountains exist and they continue to the Delaware River and resume again beyond in New Jersey. In this region few people live on mountaintops and the valleys and the Delaware River effectively block all reception to practical antenna systems for DTV⁵. The Commission policies with NTS translators and most DTV translators has utilized a 10 dB stronger contour 74 dBu and 51 dBu respectively, for the practical reception because of terrain features and relatively simple antennas often used for reception. Figure 3 and the Longley-Rice study also showed that there is no likelihood of caused interference to the reception of Channel 44 by anyone in this rugged area.

In fact Figures 1 and 4 show that the new replacement translator’s extension beyond the maximized WVIA-DT 41 dBu F(50,90) contour has been reduced from 138.8 km² to 73.9 km². The new service areas for Channel 44 are 1341.2 km² for the 51 dBu and 2903.2 km² for the 41

⁵ The WVIA-DT Consulting Engineer lives in eastern Pennsylvania and has a long experience with reception difficulties in the mountains of Pennsylvania.

dBu F(50,90) contours. The excursion outside the WVIA-DT 41 dBu contour is only 5.5% of the 51dBu replacement translator contour and only 2.5% of the 41dBu replacement translator contour.

Thus NORTHEASTERN PENNSYLVANIA TV ASSOCIATION believes that, as a practical matter, the amount of calculated contour extension is di-minimis and further believes that a waiver of proposed 74.787 is justified in this case.

CONCLUSIONS

By using the FCC recognized Longley-Rice terrain model and receiver antenna directivity, we have shown that the instant proposal meets the requirements for a “replacement digital translator” on Channel 44, and as a practical matter, the amount of calculated contour extension is di-minimis and further believes that a waiver of proposed 74.787 is justified in this case and we believe that this proposal for DTV operation of said station on Channel 44 should be GRANTED.

NORTHEASTERN PENNSYLVANIA TV ASSOCIATION

APPENDIX ONE –BSTA-20040524APB LETTER

FEDERAL COMMUNICATIONS COMMISSION
445 12TH Street, S.W.
Washington DC 20554



SEP 14 2004

IN REPLY REFER TO: 1800E2
M.H.

Northeastern Pennsylvania Educational
Television Association
c/o Waymart Wind Farm L.P.
700 Universe Blvd. (FED/JB)
Juno Beach, FL 33408

In re: Special Temporary Authority Request of:
NE. PA. ED. TV Association
WVIA-TV, Scranton, PA.
BSTA-20040524APB
Fac. ID #: 47929

Gentlemen:

This is in reference to your request for Special Temporary Authority to operate the above-captioned low power television or television translator station.

Waymart Wind Farm L.P. is the owner and operator of a wind turbine electrical generation facility in the Moosic Mountains near the town of Waymart, located in Wayne County. The operation of the newly constructed wind turbines has resulted in new interference to viewers of WVIA-TV, Scranton, PA, who reside in a mountain valley located within the predicted Grade B contour of WVIA-TV. Until such time as the Commission announces a filing window for low power television and television translator applications pursuant to Section 73.3572 of the Commission's rules, Northeastern Pennsylvania Educational Television Association licensee of station WVIA-TV requests that the Commission grant an STA for a television translator station on channel 52 to mitigate this interference to viewers within WVIA-TV predicted Grade B contour. The station's engineering showing demonstrates that the predicted 64 dBu contour of the proposed STA facility will be completed encompassed within the predicted Grade B contour of WVIA-TV.

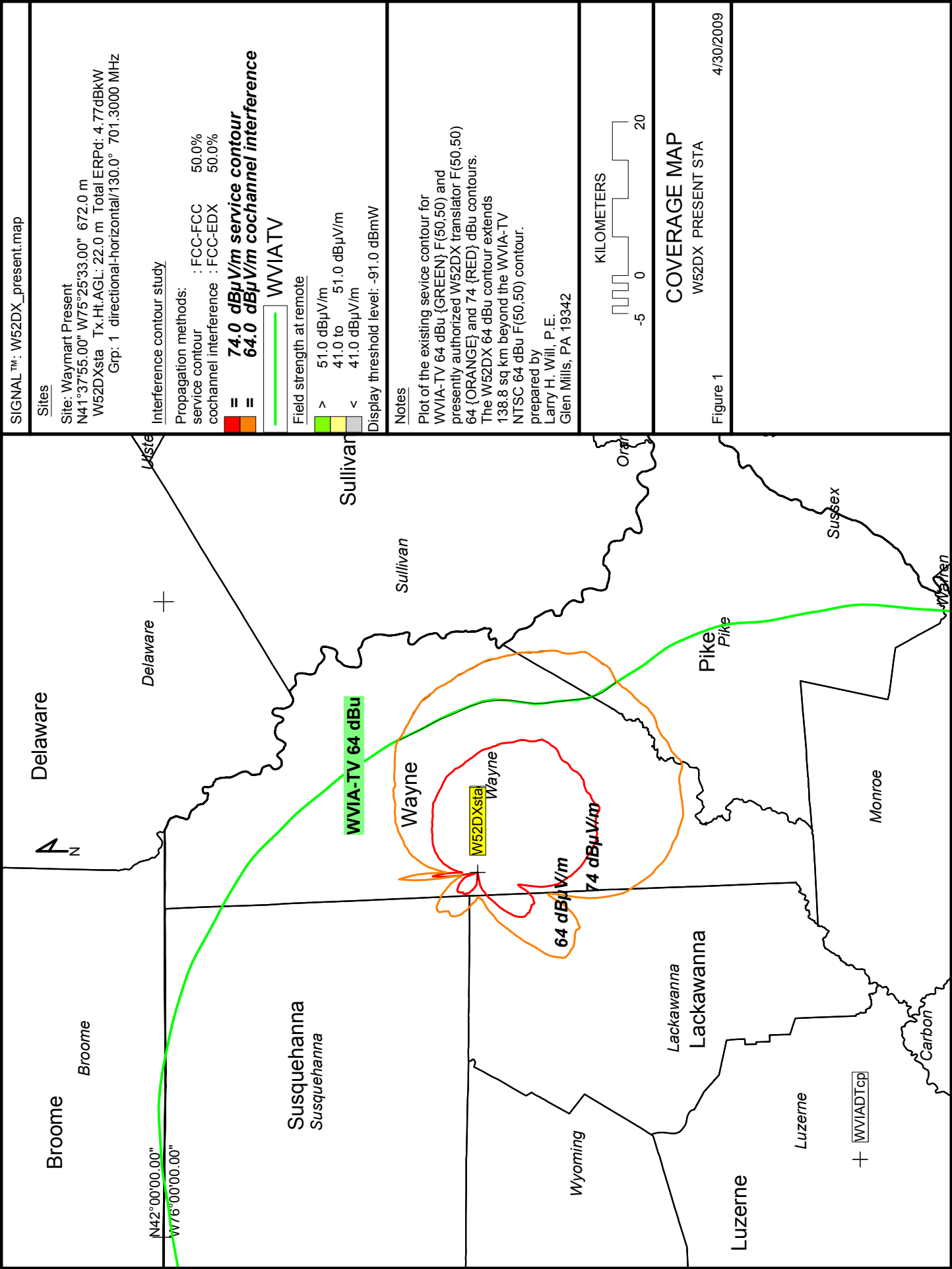
In light of the facts set forth therein, your request for Special Temporary Authority IS HEREBY GRANTED to operate the station in accordance with the specifications in your letter of May 20, 2004: Community of Service Waymart, PA, Maximum Effective Radiated Power (ERP) Towards Radio Horizon: 3.0 KW; Maximum ERP in any Horizontal and Vertical Angle: 3.0 KW; Antenna make: Kathrein, Model: K723147 (Composite); Antenna Orientation: 130.0 degrees true north; Frequency offset: Zero offset; Height of antenna radiation center above ground: 22.1 meters; Height of antenna radiation center above mean sea level: 693.7 meters; Transmitting antenna coordinates: NL: 41-37-53, WL: 75-

Temporary Call Sign: W52DX

Waymart, PA

Special operating condition or restriction:

1. The authorization is conditioned upon the use of a transmitter that has been type accepted or meets Commission type acceptance requirements at a visual carrier frequency tolerance of plus/minus 1 kHz.



SIGNAL™: W52DX_replacement.map

Sites

Site: WVIADT_new Tower
N41°10'55.00" W75°52'17.00" 600.9 m
WVIADTcpx Tx.Ht.AGL: 289.1 m Total ERP-d: 25.62dBkW
Gpr: 1 omni-vertical/0.0° 632.3100 MHz

Interference contour study

Propagation methods:
service contour : FCC-FCC 90.0%

= 41.0 dBμV/m service contour

quick contours

Notes

Plot of the service contours for
WVJA-DT and proposed NEW
replacement translator 51 dBu service
and 41 dBu secondary Digital Service
Grade contours.
prepared by
Larry H. Will, P.E.
Lynn Mills, PA 19342

KILOMETERS



COVERAGE MAP

WVIADT REPLACEMENT XLTR

4/28/2009

