

ENGINEERING EXHIBIT

Application for License to Cover

prepared for

Sunbelt Television, Inc.

KHIZ-DT Barstow, CA

Facility ID 63865

Ch. 44 1000 kW 596 m

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Compliance with Special Conditions

This material supplies a "hard copy" of the engineering portions of this application as entered June 20, 2007 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.

Section III - Engineering
TECHNICAL SPECIFICATIONS
 Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1.	Channel: 44		
2.	Operating Constants		
	Transmitter power output (average power at input to transmission line, after any filter attached to the transmitter, if used)		Transmission line power loss
	14.45 dBk 27.86 kW		0.57 dB
	Antenna Input power	Maximum antenna power gain	Maximum effective radiated power
	13.88 dBk	16.12 dB	30 dBk 1000 kW
3.	Antenna Data		
	Manufacturer	Model	
	RFT	CS-2007-03-40	

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

4.	Main Studio Location. The main studio location complies with 47 C.F.R. Section 73.1125.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 6]
5.	Constructed Facility The facility was constructed as authorized in the underlying construction permit or complies with 47 C.F.R. Section 73.1690.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 7]
6.	Special Operating Conditions. The facility was constructed in compliance with all special operating conditions, terms, and obligations described in the construction permit. An exhibit may be required. Review the underlying construction permit	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 8]
7.	Transmitter. The transmitter complies with 47 C.F.R. Section 73.1660.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 9]

APPLICATION FILED PURSUANT TO 47 C.F.R. SECTIONS 73.1675(c) OR 73.1690(c).

Only applicants filing this application pursuant to 47 C.F.R. Sections 73.1675(c) or 73.1690(c) must complete the following section.

8.	Changing transmitter power output. Is this application being filed to authorize a change in transmitter power output caused by the replacement of an omnidirectional antenna with another omnidirectional antenna or an alteration of the transmission line	<input type="radio"/> Yes <input type="radio"/> No
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	system? See 47 C.F.R. Sections 73.1690(c)(1) and (c)(10).	
9.	<p>Replacing a directional antenna. Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(3) to replace a directional antenna with another directional antenna?</p> <p>If "Yes" to the above, the applicant certifies the following:</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p>
	<p>a. Pattern of Directional Antenna. The proposed theoretical antenna pattern complies with 47 C.F.R. Section 73.1690(c)(3). Exhibit is required.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 10]</p>
10	<p>Use a formerly licensed main facility as an auxiliary facility. Is this application being filed pursuant to 47 C.F.R. Section 73.1675(c)(1) to request authorization to use a formerly licensed main facility as an auxiliary facility and/or change the ERP of the proposed auxiliary facility?</p> <p>If "Yes" to the above, the applicant certifies the following:</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p>
	<p>a. Auxiliary antenna service area. The proposed auxiliary facility complies with 47 C.F.R. Section 73.1675(a). Exhibit is required.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 11]</p>
	<p>b. Environmental Protection Act. The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1 306 (i.e., the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments).</p> <p>By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 12]</p>
11.	<p>Change the license status. Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(9) to change the license status from commercial to noncommercial or from noncommercial to commercial?</p> <p>If "Yes" to above, submit an exhibit providing full particulars. For applications changing license status from commercial to noncommercial, include Section II of FCC Form 340 as an exhibit to this application.</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p> <p>[Exhibit 13]</p>

PREPARER'S CERTIFICATION ON PAGE 6 MUST BE COMPLETED AND SIGNED

SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name	Relationship to Applicant (e.g., Consulting Engineer)
ROBERT J. CLINTON	CONSULTANT
Signature	Date

6/20/2007		
Mailing Address CAVELL, MERTZ & ASSOCIATES, INC. 7839 ASHTON AVENUE		
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WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Exhibits

Exhibit 7

Description: EXHIBIT 7 - STATEMENT A

EXHIBIT 7 - STATEMENT A - CONSTRUCTED FACILITY

Attachment 7

Description

[EXHIBIT 7 - STATEMENT A](#)

Exhibit 8

Description: EXHIBIT 8 - STATEMENT B

EXHIBIT 8 - STATEMENT B - SPECIAL CONDITIONS

Attachment 8

Description

[EXHIBIT 8 - STATEMENT B](#)

Exhibit 7 – Statement A
CONSTRUCTED FACILITY
prepared for
Sunbelt Television, Inc.
KHIZ-DT Barstow, CA
Facility ID 63865
Ch. 44 1000 kW 596 m

Introduction

Sunbelt Television, Inc., (“*Sunbelt*”) is licensee of NTSC television station KHIZ(TV), Channel 64 and permittee of digital television (“DTV”) station KHIZ-DT, Channel 44, Barstow, CA. *Sunbelt* has completed construction of a new DTV facility authorized for KHIZ-DT in the Construction Permit (“CP”) FCC File No. BPCDT-19991028ACX and has commenced program tests in accordance with Section 73.1620(a)(1) of the Rules. **Exhibit 7 – Table I**, attached, provides information regarding the antenna and transmission line specifications employed in the determination of the transmitter power output.

The CP authorized KHIZ-DT to operate with an effective radiated power (“ERP”) of 1,000 kW with an antenna height of 596 meters height above average terrain (“HAAT”) using a non-directional antenna. An Andrew model ATW22H3-HSO-44 non-directional antenna was originally specified and authorized in the CP. However, *Sunbelt* has substituted an RF Technologies CS-2070-03-40 non-directional antenna for the originally specified Andrew model. Accordingly, the substitute antenna was evaluated for compliance with Section 1.1307(b) of the FCC Rules regarding human exposure to radiofrequency electromagnetic field.

The KHIZ-DT operation has been evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission’s OET Bulletin No. 65 (“OET-65”). OET-65 describes a means of determining whether a facility exceeds the RF exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET-65. Based upon that methodology, and as demonstrated in the following, the KHIZ-DT facility complies with the cited adopted guidelines.

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CONSTRUCTED FACILITY
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KHIZ-DT Human Exposure to RF Electromagnetic Field

According to information provided by the applicant, the KHIZ-DT transmitting antenna is mounted such that its center of radiation is 146 meters above ground level. An ERP of 1,000 kilowatts, horizontally polarized, is employed utilizing an RF Technologies CS-2070-03-40 non-directional antenna. According to data provided by the antenna manufacturer, the maximum relative field value in nearby downward directions (between 15 and 90 degrees below the horizontal) is less than 10 percent on Channel 44. Thus, a value of 10 percent relative field is used for this calculation. The “general population/uncontrolled” limit specified in §1.1310 for Channel 44 (653 MHz center channel) is 435.3 $\mu\text{W}/\text{cm}^2$.

OET-65's formula for television transmitting antennas is based on the NTSC transmission standards, where the average power is normally much less than the peak power. For the DTV facility considered herein, the peak-to-average ratio is different than the NTSC ratio. The DTV ERP figure herein refers to the average power level. The formula used for calculating DTV signal density in this analysis is essentially the same as equation (9) in OET-65.

$$S = (33.4098) (F^2) (ERP) / D^2$$

Where:

S	=	power density in microwatts/cm ²
ERP	=	total (average) ERP in Watts
F	=	relative field factor
D	=	distance in meters

Using this formula and the assumptions above, the proposed facility would contribute a power density of 16.1 $\mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure, or 3.7 percent of the general population/uncontrolled limit. At ground level locations away from the base of the tower, the calculated RF power density is even lower, due to the increasing distance from the transmitting antenna.

§1.1307(b)(3) states that facilities contributing less than five percent of the exposure limit at locations with multiple transmitters (such as the case at hand) are categorically excluded from taking any corrective action in the areas where its contribution is less than five percent. Since KHIZ-DT

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CONSTRUCTED FACILITY
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meets the five percent exclusion test at all ground level areas, the impact of other facilities near this site may be considered independently from KHIZ-DT.

Safety of Tower Workers and the General Public

As demonstrated herein, excessive levels of RF energy attributable to KHIZ -DT will not be caused at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public are not exposed to RF levels in excess of the Commission's guidelines. Nevertheless, tower access will continue to be restricted and controlled through the use of a locked fence. Additionally, appropriate RF exposure warning signs will continue to be posted.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will continue to be employed protecting maintenance workers from excessive exposure when work must be performed on the tower or nearby in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines will be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations.

Exhibit 7 - Table I
ANTENNA / LINE SYSTEM GAINS AND LOSSES

prepared for
Sunbelt Television, Inc.
KHIZ-DT Barstow, California
Facility ID 63865
Ch. 44 1000 kW 596 m

Construction Permit File Number: BPCDT-19991028ACX

Authorized Effective Radiated Power:	30.00 dBk	1000 kW
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Antenna System

RFT CS-2070-03-40

	Power Gain:	16.12 dB
	Antenna Input Power:	13.88 dBk
		24.43 kW

Line and Other Losses

Transmission Line

MYAT 6 1/8 inch 75 Ohm rigid line

Length 490 ft Loss: 0.55 dB

Transmission Line

MYAT 6 1/8 inch 50 Ohm coax

and 50 to 75 Ohm Transformers

Length 17 ft Loss: 0.02 dB

Total Losses:	0.57 dB	
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<u>Required Transmitter Power Output</u>	14.45 dBk	27.86 kW
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