April 2007
New FM Channel 280C1
Spring Creek, NV
NIER Analysis

Facilities Proposed

The proposed operation will be on Channel 280C1 (103.9 MHz) with an effective radiated power
of 33 kilowatts. Operation is proposed with an 8-element circularly-polarized omni-directional 0.9-
wavelength-spaced antenna. The antenna will be side-mounted on an existing tower located 11
km northwest of Elko.

The antenna support structure does not exceed 60.96 meters (200 feet) above ground and does
not require notification to the Federal Aviation Administration. Therefore, this structure does not
require an Antenna Structure Registration Number.

NIER Calculations

Several other broadcast facilities operate from this transmitter site, as detailed below. FM
translators operating with less than 100 Watts ERP have been excluded from this analysis.

The power density calculations shown below were made using the techniques outlined in OET
Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height
of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on
the ground in the vicinity of the tower. The equation shown below was used to calculate the
ground level power density figures from each antenna.

$$S(mW/cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element
pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the
tower to a distance of 1000 meters. Values past this point are increasingly negligible.

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Calculations of the power density produced by the proposed Spring Creek FM antenna system assume a Type 2 element pattern, which is the element pattern for the "double V" antenna proposed for use. The highest calculated ground level power density occurs at a distance of 11 meters from the base of the antenna support structure. At this point the power density is calculated to be 40.8 μW/cm².

Calculations of the power density produced by KSCY and the other stations at this transmitter site are summarized in the following table:
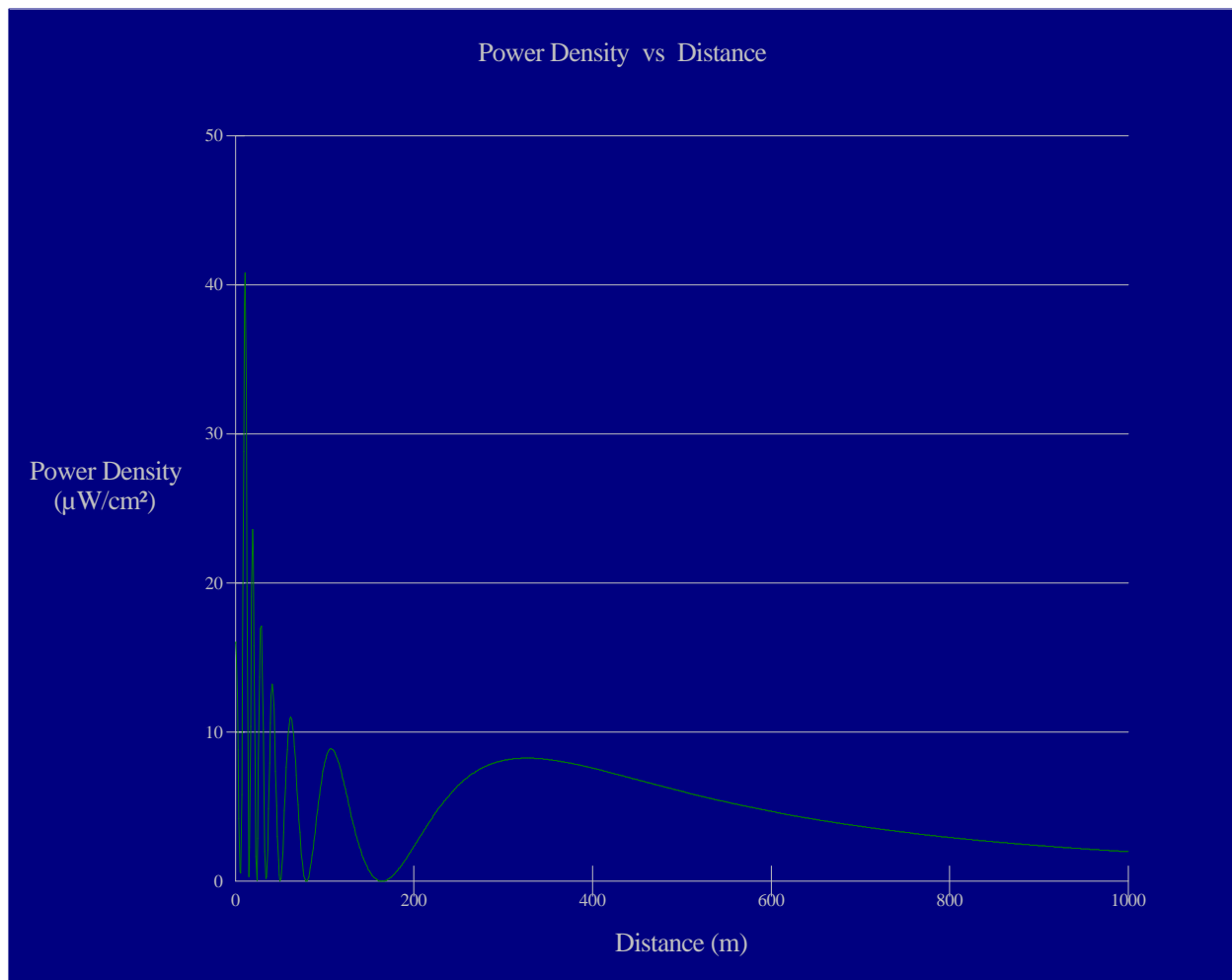
Call	Avg or Peak ERP Antenna Model	Relative Field Source	Height AGL	Calculated Exposure	Gen Pub FCC Limit	% of Limit
Spring Creek 280C1	32 kW avg double V 8-bay 0.9	FMModel	25 m	40.8 μW/cm²	200 μW/cm²	20.4%
KOYT(FM) 233CØ	36 kW avg double V 8-bay 0.9	FMModel	25 m	45.9 μW/cm²	200 μW/cm²	22.3%
KHIX(FM) 244C1	12.6 kW avg Shively 8-bay full	FMModel	49 m	15.5 μW/cm²	200 μW/cm²	7.8%
KLKO(FM) 229C2	4.5 kW peak double V 4-bay half	FMModel	24 m	16.9 μW/cm²	200 μW/cm²	8.5%

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of Spring Creek FM and the present operations of the other stations at this site (were their maxima to coincide, which they do not) is 59% of the FCC standard for uncontrolled environments.

Public access to the site is restricted and the antenna tower is posted with warning signs. Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow

appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

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Power Density vs Distance

Ground-Level NIER   **OET FMModel**

Spring Creek 280C1
Antenna Type: double V
No. of Elements: 8
Element Spacing: 0.9 wavelength

Distance: 1000 meters
Horizontal ERP: 32 kW
Vertical ERP: 32 kW

Antenna Height: 25 meters AGL

Maximum Power Density is 40.8 : W/cm^2 at 11 meters from the antenna structure.

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