

Statement A
CONSOLIDATED ENGINEERING STATEMENT
Proposed Modification of KYGO-FM Denver, Colorado Auxiliary Facility
BLH-19981120KE - Facility ID 30829
prepared September 2018 for
Bonneville International Corporation

Introduction and Purpose of Application

Bonneville International Corporation (“Bonneville”) is the licensee of KYGO-FM in Denver, Colorado. *Bonneville* herein requests a modification of its companion KYGO-FM Auxiliary facility license pursuant to the provisions of FCC Rule Section 73.1675(c)(1) for the following reason:

- KYGO-FM is presently authorized to operate as a Class C facility on Channel 253 under FCC File Number BMLH-20120731AEH.
- *Bonneville* holds Construction Permit (CP) Number BPH-20171115AAK for KYGO-FM which authorizes a site change, a change in class from C to C0, and a change in Effective Radiated Power (“ERP”) and antenna Height Above Average Terrain (“HAAT”). Construction authorized under this CP is essentially completed; an “Application for License to Cover” is to be filed in the near future.
- *Bonneville’s* auxiliary transmitting facility for KYGO-FM is authorized at a separate location (see FCC File Number BLH-19981120KE¹).

The above described KYGO-FM CP contains several “Special Operating Conditions or Restrictions”. Pertinent to the KYGO-FM auxiliary facility is the main facility’s CP Condition Number 5 which states:

Upon commencement of program tests in accordance with 47 C.F.R. § 73.1620, the licensee must cease use of the auxiliary facility authorized by BLH-19981120KE due to a violation of 47 C.F.R. § 73.1675(a)(1). Alternatively, the licensee may seek modification of the auxiliary facility in accordance with § 73.1675(c)(1) to bring it into compliance with § 73.1675(a)(1)². Documentation of compliance with this condition must be submitted with the FCC Form 302-FM application for license.

¹ This Auxiliary station operates with 19.5 kW ERP (non-directionally) at an effective antenna height of 188 meters.

² FCC Rule Section 73.1675 addresses Auxiliary antennas. Paragraph (a)(1) (ii) of that Rule states:

*“An auxiliary antenna is one that is permanently installed and available for use when the main antenna is out of service for repairs or replacement. An auxiliary antenna may be located at the same transmitter site as the station’s main antenna or at a separate site. The service contour of the auxiliary antenna may not extend beyond the following corresponding contour for the main facility:
FM stations: The 1.0 mV/m field strength contours.”*

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A study of the coverage achieved by the present KYGO-FM Auxiliary station confirms that the Auxiliary facility's 1.0 mV/m ("60 dBμ") contour would extend beyond the predicted 60 dBμ footprint of the KYGO-FM CP main facility once it becomes licensed and operational. This contour extension can be easily resolved by reducing the Auxiliary facility's ERP from 19.5 kW to 10 kW without making any other changes.

Accordingly, this application requests a modification of the KYGO-FM Auxiliary station license to reduce its ERP to 10 kW through the FCC's "modification of license" process, as permitted under §73.1675(c)(1) of the Commission's Rules. A grant of this request will assure compliance with "Condition 5" of the KYGO-FM main facility Construction Permit.

Details of the Proposal

There will be no changes in the existing KYGO-FM auxiliary transmitting system other than a reduction in transmitter power to achieve the necessary reduction in ERP to achieve compliance with the FCC's Auxiliary Facility contour extension Rule - § 73.1675(a)(1).

For the purposes of determining coverage for both the Main CP and the proposed Auxiliary station, locations of all contours were determined in one degree intervals. The results are presented in the attached **Figure 1** and in the detailed view of **Figure 1A**. (The Auxiliary facility's contour depiction is based on the proposed reduced ERP level of 10 kW.) As shown, the KYGO-FM auxiliary 1 mV/m (60 dBμ) contour would be wholly contained within the 1 mV/m (60 dBμ) contour generated by the KYGO-FM CP operation³ – thus the provisions of FCC Rule Section 73.1675(a)(1) will be satisfied. No other changes are proposed.

Interference Considerations

The existing transmitter site is located over 800 km from the U. S. – Mexican border and over 1000 km from the U.S. – Canada border. The proposed auxiliary operation does not extend the main facility's protected contour in any direction. Therefore international coordination is not necessary for the instant proposal. Based on data extracted from the FCC's CDBS database, no AM broadcast stations are located

³ The proposed auxiliary 60 dBμ contour would also be wholly contained within the presently licensed KYGO-FM main facility's 60 dBμ contour.

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within 11 km of the proposed site. FM main and auxiliary facilities are collocated at this site; however no adverse impact to any of the long-existing facilities is expected to occur due to the simple power reduction proposed herein. The nearest FCC monitoring station is at Grand Island, Nebraska at a distance of over 580 km from the proposed site, which exceeds by a great margin the minimum distance specified in §73.1030(c)(3)(iv). This site is located approximately 47.25 km from the Table Mountain “Radio Receiving Zone” in Boulder County, Colorado. Advance coordination is not believed to be required since the proposed operation specifies a reduction in overall power level. Further, this proposed operation does not fall under the criteria listed in §73.1030(b)(1)(i) through (iv); the intended site is not located within the distances listed in §73.1030(b)(1)(i) through (iii), and while the site is within 80 km of Table Mountain, the proposed maximum ERP of 10 kW is less than the 25 kW triggering level found in this rule. It is therefore believed that the facility proposed herein will satisfy all of the pertinent Commission Rules and Policies now in effect regarding allocation matters for an auxiliary facility.

Transmitter Power Calculations

The following presents calculations demonstrating the transmitter power output (“TPO”) level necessary to achieve the requested ERP of 10 kW given all known RF system gains and losses.

Proposed Effective Radiated Power:				10.0 kW		10.00 dBk	
<u>Antenna System</u>							
Harris FMH-2AE		Max Power Gain:		0.9971		-0.013 dB	
Antenna Input Power:				10.029 kW		10.013 dBk	
<u>Line and Other Losses</u>							
80 feet, Andrew HJ8-50B				Loss:		0.112 dB	
(3" Air-Dielectric cable at 0.140 dB/100 feet)							
				Total Losses:		0.112 dB	
Transmitter Power Output:				10.29 kW		10.125 dBk	

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Environmental Considerations - Human Exposure to Radiofrequency Radiation

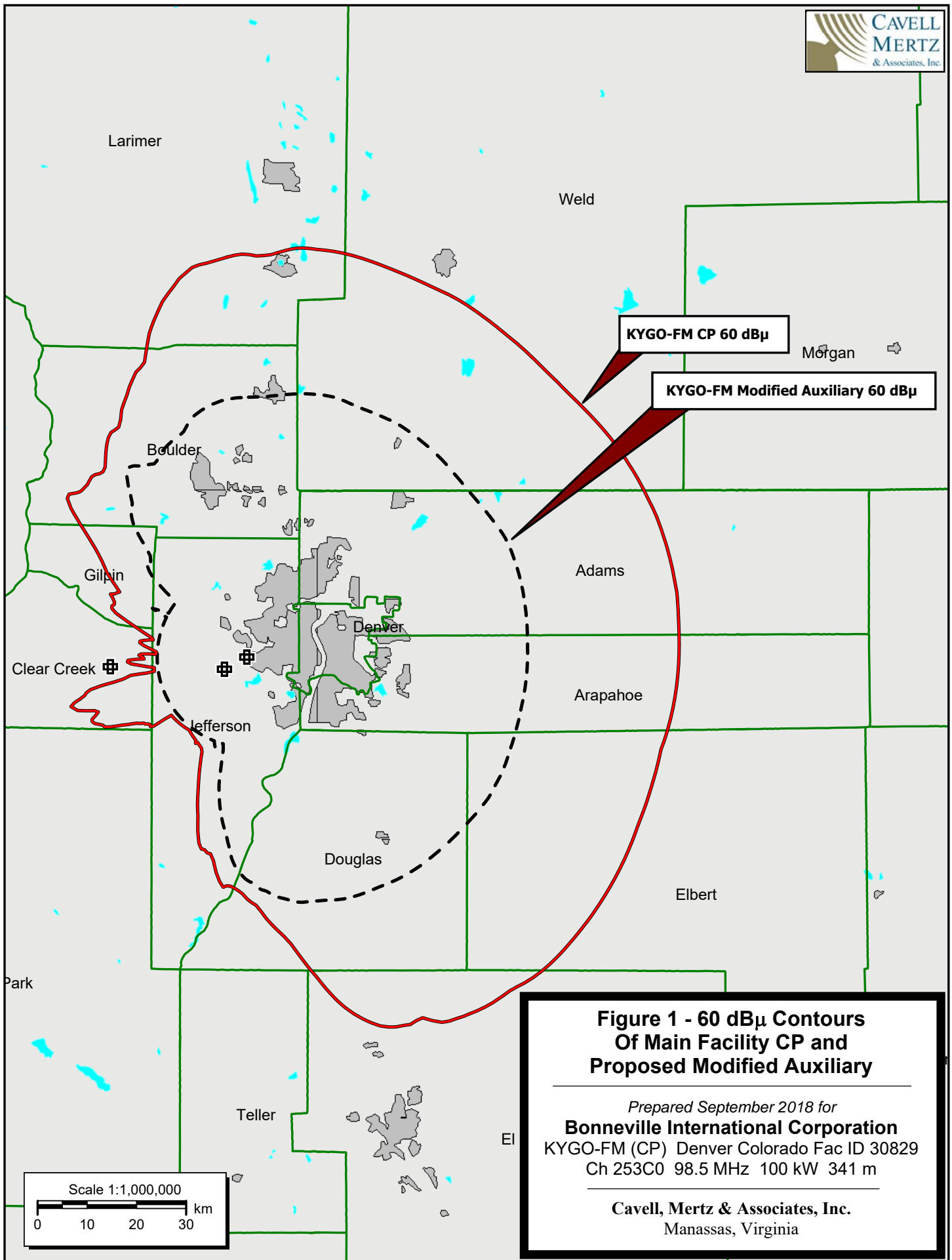
No changes will be made in the existing antenna system employed by Bonneville for the KYGO-FM Auxiliary antenna to accomplish the requested power reduction. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to **Note 1** of §1.1306 of the FCC Rules, Therefore it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

With respect to the potential for RF Exposure, the *Bonneville* auxiliary facility is an intermittent use operation, employed for emergencies when the main facility cannot be operated. This modification proposal specifies a *reduction* in presently authorized effective radiated power (from 19.5 kW to 10 kW - circularly polarized). As such, the proposed auxiliary operation will be *reducing* the impact below the previously approved and coordinated levels.

The site is a controlled access area, and the tower base is secured behind a perimeter fence. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Tower site access will continue to be restricted and controlled. Additionally, appropriate RF exposure warning signs will continue to be posted.

With respect to worker safety, a site exposure policy is employed protecting maintenance workers from excessive exposure when work must be performed in areas where high RF levels may be present while the auxiliary facility is in operation. Such protective measures may include, but are not limited to, restriction of access to areas where levels in excess of the guidelines may be expected, facility power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the occupational exposure guidelines would otherwise be exceeded. *Bonneville* will closely coordinate with other licensees utilizing this.

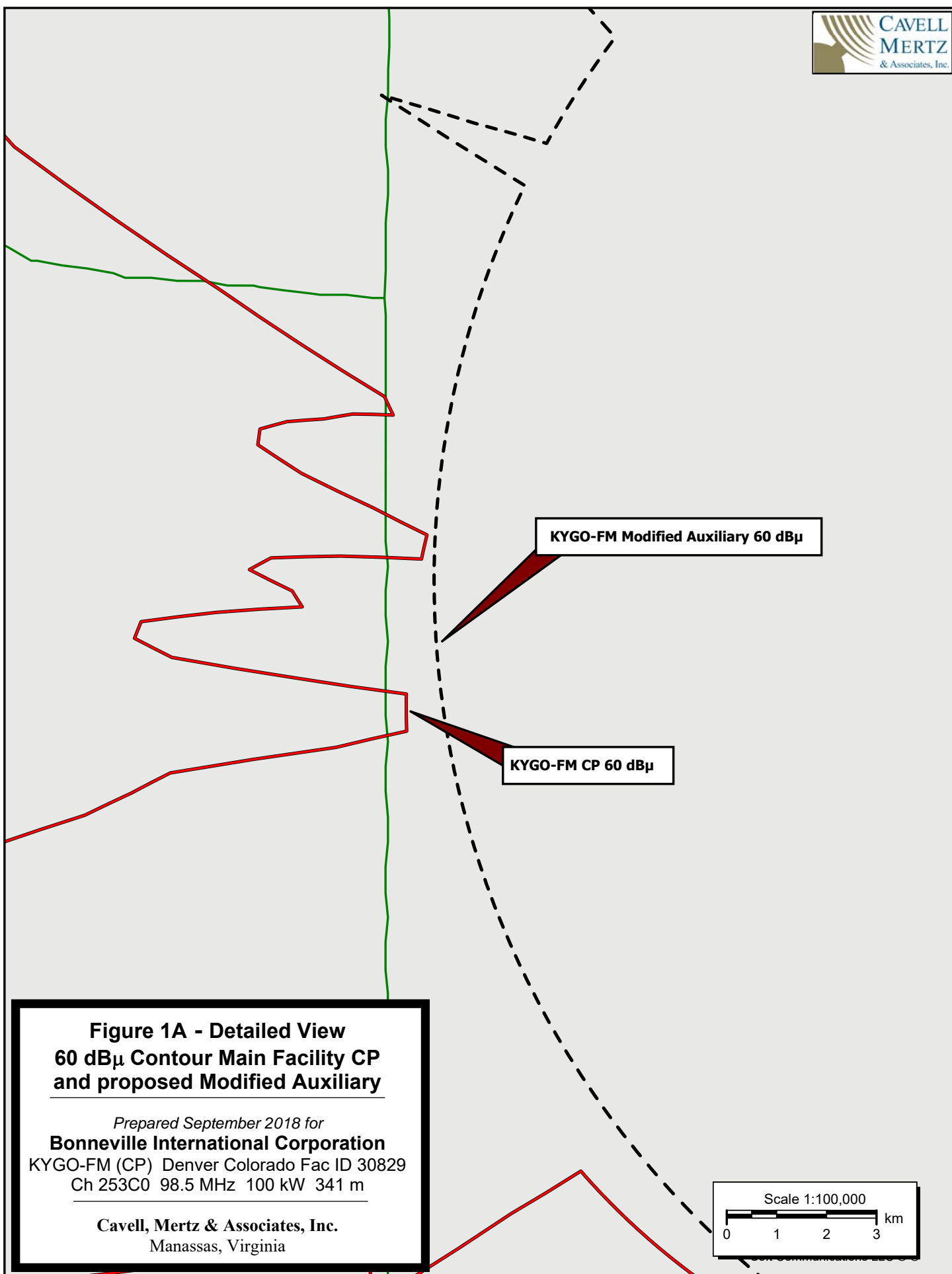
Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under §1.1306 of the Rules; hence preparation of an Environmental Assessment is not required.



**Figure 1 - 60 dB μ Contours
Of Main Facility CP and
Proposed Modified Auxiliary**

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Ch 253C0 98.5 MHz 100 kW 341 m

Cavell, Mertz & Associates, Inc.
Manassas, Virginia



**Figure 1A - Detailed View
60 dB μ Contour Main Facility CP
and proposed Modified Auxiliary**

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