HERMAN & WHITEAKER, LLC

DONALD L. HERMAN, JR
GREGORY W. WHITEAKER
ROBIN E. TUTTLE†
SUSAN C. GOLDHAR ORNSTEIN
SARAH L. J. ACEVES††

†Admitted in DC, SC and FL only
††Admitted in DC only

TEL 202-600-7272
FAX 202-706-6056
3204 TOWER OAKS BLVD, STE 180
ROCKVILLE, MD 20852

April 30, 2014

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Ex Parte Presentation of Nuclear Energy Institute ("NEI"), the Utilities Telecom/Council ("UTC") and Pinnacle West Capital Corp. in WI Dockets Nos. 08-166 and 08-167, ET Docket No. 10-24 and GN Docket No. 12-268

Dear Ms. Dortch:

In a meeting on April 29, 2014, J. Jeffrey Craven of Thompson Coburn, LLP, representing the Nuclear Energy Institute and Donald L. Herman, Jr. of Herman & Whiteaker, LLC, representing Pinnacle West Capital Corp. (the undersigned)(collectively, the "Nuclear Representatives"), met Louis Peraertz in the Office of Comm. Clyburn.

In the meeting, the Nuclear Representatives outlined the history of the nuclear plants' use of the Telex wireless headset equipment, as well as its unique capabilities. The Nuclear Representatives also discussed the special challenges associated with providing reliable communications services inside and around nuclear plants' containment buildings, and the fact that the Telex equipment has no peer when it comes to providing clear, hands-free communications, especially inside the containment buildings, as more fully described in the attached PowerPoint presentation (attached as Exhibit A). The Nuclear Representatives also displayed photos that illustrate the use of Telex equipment in the nuclear plant environment (attached as Exhibit B).

The Nuclear Representatives referred to the October 1, 2010 joint letter from the Office of Engineering and Technology and the Wireless Telecommunications Bureau (the "Waiver Letter") which granted the nuclear plants a modification of the blanket waiver provided under the Report and Order and Further Notice of Proposed Rulemaking (the "Rulemaking"), allowing the plants additional flexibility in their use of low power auxiliary devices in the television bands, as detailed in the Waiver Letter which is attached hereto as Exhibit C.

The Nuclear Representatives repeated their ask that the Commission keep in mind the

nuclear plants' request as outlined in their Comments and Reply Comments in the Rulemaking that the FCC (i) codify in Part 15 the special rule waiver granted pursuant to the Waiver Letter, and (ii) make the plants eligible under Part 74 of the Commission's rules for licensed use of Telex equipment in compliance with the Part 74 technical and operational requirements. The representatives provided specific language to be added to Sections 15.238 and 74.801 of the FCC's rules, which could be adopted to codify the Nuclear Representatives requests. These proposed rule changes are contained on page 5 of the attached PowerPoint, attached as Exhibit A. The representatives also expressed an openness to continue dialogue with the FCC and the FCC's Incentive Auction Task Force to accomplish resolution to this on-going matter.

Should you have any questions regarding this ex parte meeting, please contact the undersigned.

Respectfully submitted,

Donald L. Herman, Jr.
Counsel for Pinnacle Capital Corp.

cc: Louis Peraertz (w/ enclosure)
J. Jeffrey Craven (w/ enclosure)

EXHIBIT A

Presentation
by
Nuclear Energy Institute,
Utilities Telecom Council
and
Several Nuclear Plants
to the
Federal Communications Commission

March, 2014

Overview of Issue

- The plants are currently permitted to use Telex headsets pursuant to a temporary waiver of the Part 15 rules pending final action in the Wireless Microphones proceeding.
- Nuclear plants are heavily regulated by the Nuclear Regulatory Commission and plan for outages and other critical operations months or even years in advance, and therefore must have greater regulatory certainty that they will have long-term ability to use this equipment.
- The pendency of the Wireless Microphone Rulemaking and the Incentive Auction Rulemaking leave the plants with great uncertainty regarding their future rights to use this highly effective and reliable equipment that reduces workers exposure to radiation and, generally, improves the safe operations of the plants.

Protection of Worker Health & Safety and Unique Circumstances Compel Regulatory Relief

- Unlike most uses of Telex headsets, nuclear plants use them for **the protection of worker health and safety factors**.
- 104 Nuclear Power Plants operate at 65 separate locations nationally, generating 20% of U.S. electricity.
- Nuclear plants have **ten (10) years of experience to show that the Telex signals do not cause interference** to licensees/users outside the plants.
- Nuclear plants present an ultra-challenging and unique wireless communications environment (e.g., four foot thick outer walls, containment building's domed ceiling; dosimeters operating largely at 910-917 MHz, as well as numerous other wireless devices and equipment/systems, that must operate simultaneously, reliably and in very close proximity).
- Nuclear industry workers need fully functional communications equipment to perform indoor activities in "hot" areas during outages; to move spent fuel indoors; and to perform certain maintenance functions, including handling radioactive waste.
- Telex equipment offers reliable, high-performance, fully duplex, hands-free communications solutions, thereby materially benefitting worker health and safety.
- Telex equipment operates at just 100 milliwatts, thereby significantly limiting interference risk to licensees.
- Meeting the NRC's standard that requires the plants to operate in a manner that keeps plant workers' exposure to radiation "as low as reasonably achievable" ("ALARA") is enabled via the Telex equipment.

Relief Requested in Rulemaking Proceeding

- Codify in Part 15 the rule waiver granted by the Commission in 2010, thereby allowing the Plants to use Telex wireless headsets on television band frequencies without regard to distance separations, indoors only.

- As suggested by the Commission in the R&O and Further Notice, make the Plants eligible under Part 74 of the Commission's rules for licensed use of Telex equipment at their plants. The Plants understand and accept that such Part 74 licensing would be available only in circumstances where distance separation and other technical requirements can be met.

- Even with these limitations, the option to secure Part 74 licensing, consistent with the Part 74 technical rules, would allow the Plants greater flexibility to use their Telex equipment in more limited outdoor applications at their facilities, such as when carrying fuel rods to storage locations.

- This combination, Part 15 waiver codification for indoor use, and Part 74 eligibility largely for outdoor use, would enable the Plants to continue to meet their mission-critical communications requirements and also reduce worker dose while increasing overall plant safety.

Proposed textual additions in support of requested relief:

1. Add the following subsection (f) to the new Section 15.238 as proposed in the FNPRM in WT Docket No. 08-166, 25 FCC Rcd 643 (2010).

§ 15.238 Operation in the bands 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-698 MHz.

* * *

(f) Notwithstanding any other provision of this Section, wireless audio devices may be used at a nuclear power plant on any frequencies in the 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-698 MHz bands for two-way voice communications in support of plant operations, subject to the following terms and conditions:

(1) The unmodulated carrier power at the antenna input may not exceed 100 mW.
(2) Such devices shall only be operated within buildings that are inside the security perimeter of the nuclear power plant.
(3) Such devices may operate on any frequencies in these bands on a non-interference basis to licensed co-channel facilities.

2. Add the following definition to Section 74.801:

§74.801 Definitions

*** * ***

Nuclear power plant. A nuclear power plant is a facility authorized by the Nuclear Regulatory Commission to generate electricity through the use of nuclear power.

3. Add the following subsection (7) to Section 74.832(a):

§74.832 Licensing requirements and procedures.

(a) A license authorizing operation of one or more low power auxiliary stations will be issued only to the following:

* * *

(7) The operator of a nuclear power plant for use solely within the plant's outer security perimeter.

A. Regulatory Background

- 2003 – 2007: FCC approves use of Telex equipment at nuclear plants via Special Temporary Authorization ("STA") and issues STA to Nuclear Energy Institute ("NEI") for use of Telex equipment at the nuclear plants.

- April 2007 -- NAB, MSTV, SBE, NEI and Utilities Telecom Council ("UTC") file an agreement (the "Consensus Plan") with FCC to allow nuclear plants to continue to use Telex equipment pursuant to FCC-granted experimental licenses.

- Summer 2007 – February 2008: FCC and NTIA approve experimental licenses for nuclear plants to continue to use Telex equipment; and nuclear plants, NEI and UTC file reports with FCC confirming no alternative equipment is available to meet nuclear plants' communications and safety requirements presently served by Telex equipment.

- Summer 2008 -- Nuclear plants, NEI and UTC sponsor survey of industry use of Telex equipment and alternative equipment, as well as engineering studies of certain alternative equipment, and submit data to FCC's Office of Engineering & Technology.

- Winter 2008/January 2009 – Nuclear plants apply for and receive 12 month renewals (until 2/17/2010) of their experimental licenses.

- Fall 2009 – NEI and UTC seek Waiver of Parts 2 and 90 of FCC Rules to permit plants to be licensed under Part 90, using Telex equipment, certified under Subpart H, Part 74, for indoor use.

- Winter 2009 – Plants file applications seeking renewal of their experimental licenses.

- August 2010- FCC grants Experimental Licenses for up to 3 years for use above 700 MHz (in order to allow a transition period); denies Experimental Licenses for use below 700 MHz, directing plants to operate below 700 MHz pursuant to Blanket Waiver ("Waiver") set forth in Wireless Microphone Order, 1/15/10.

- September 2010 - Plants request OET to provide relief from co-channel separation and power limitations required under the Waiver, urging instead that OET use the standards embraced by Broadcasters under the 2007 Consensus Plan.

- October 1, 2010, WTB and OET granted a modification of the Waiver, permitting operation without regard to the Part 15 co-channel separation thresholds and expanding the power cap to 100 milliwatts, thereby enabling the plants to use Telex equipment **indoors,** below 698 MHz, during the pendency of the Wireless Microphone rulemaking.

- January 25, 2013 and March 12, 2013, the Plants file Comments and Reply Comments, respectively, in the Wireless Microphone Rulemaking seeking the relief described herein.

B. Operating Experience and Test Results Over 10 Years Demonstrate No Risk of Interference

- From 2003 – 2007, plants used Telex equipment - indoors *and outdoors* – via Special Temporary Authorization and Experimental Licenses, **without single incident of interference.**

- From 2007-2010 the plants used Telex equipment pursuant to Experimental Licenses under the Consensus Plan co-authored with MSTV, NAB and SBE, allowing operation indoors (without any frequency coordination), and outdoors (following frequency coordination), **without a single incident of interference.**

- Since 2010 the plants have operated under the Waiver associated with the Wireless Microphone Order, supplemented by the October 1, 2010 letter from OET and WTB, modifying the conditions for use of Telex equipment under the Waiver, **without a single incident of interference.**

- **Intermittent Use:** 50% of the nuclear plants use Telex equipment only during outages (every 18 months); 25% use it two to three times per month for maintenance; 10% use it weekly.

- Plant building walls are thick enough to keep radiation inside and also thick enough to keep Telex signal inside. Tests by engineering consultants 2006 and 2011 demonstrate that the combination of earth, water, and 4' thick walls of concrete and steel combine to cause signal attenuation fall to levels below Part 15 Rules (e.g. less than 200 microvolts per meter), within just 91.4 meters (300 feet) from plant buildings and well within the security fence around the plants.

C. No Reasonably Acceptable Alternative Equipment Available

- Nuclear plant licensees have tested 29 different alternatives to the Telex equipment since 2003. A complete list of the 29 potential alternatives tested is attached as Exhibit A to this power point. Exhibit B provides quotes from plant representatives regarding the short-comings and deficiencies of these "potential alternatives."

- None of the alternatives equipment tested demonstrated anything close to the same functional capability and plant worker health and safety protection, consistent with NRC's ALARA radioactive dose standard, as does the Telex equipment.

- The alternatives tested each suffered from one or more of the following deficiencies:
  - Triggered unacceptable interference with other wireless devices essential to Nuclear plant operations (e.g., dosimeters) and wireless networks;
  - "Multi-path" interference resulting from a "reflected signal" from the containment building's domed ceiling subtracts signal strength rendering it too low/weak to receive;
  - Inadequate coverage/footprint;
  - Unacceptable voice quality; and
  - Insufficient capacity for multiple headsets in simultaneous use.

- For coverage, clarity, capacity and reliability, Telex equipment remains the best option for the nuclear industry's functional communications requirements, and for limiting worker exposure to radiation, as well as the promotion of safe plant operations.

D. Requested Relief Is In The Public Interest

- Relief is in the public interest:
  - Safety and health of nuclear plant workers is advanced materially by use of the Telex equipment because it reduces the number of workers that must be exposed to radiation, as well as the duration of those exposures, thus helping the plants meet the NRC's ALARA requirements for protecting workers
  - Use of the Telex equipment advances safe plant operations by providing clear, reliable communications which reduce the number of accidents
  - **10 years of *indoor and outdoor use* with ZERO reports of interference demonstrates that the nuclear plants' use of Telex equipment does not interfere with any FCC licensees**

- Unique factual circumstances compel grant of Relief:
  - Protection of worker public health and safety requires use of communications equipment produced only by Telex
  - Indoor only use, under Part 15, at up to 100 mW, on an intermittent basis, together with fortress-like construction of the plants, makes **virtually impossible interference with other FCC licensees**
  - Outdoor use only when co-channel separation and other technical requirements can be met.
  - Use is conditioned on non-interference, in any event.
  - Plants have tested 29 potential alternatives; none compare with Telex equipment in mastering the challenging environment of nuclear buildings

Exhibit 1: Potential Alternative Equipment Tested 2003-Currently

- Comotronic Wireless Headsets (radio built-in)
- Kenwood Walkie-talkie (hand-held radio)
- Cisco Wireless Phone Model 7920
- Vertex 600
- Ascom Cell Phone
- Ascom Wireless Phone System w/Kenwood radios
- Vega
- Ericson
- Earmark
- Motorola MTS 200/2000
- Panasonic
- HME
- Peltor
- D. Clark
- Areeva
- Sound Powered Head Phones
- Avaya Specta-Link VoIP Phone System 802.11
- Site Telephone System
- Ascom Mini Cell Private Cell Systems
- Cattron Theimeg Portable Remote Control System 460 MHz
- Motorola 9250 900 MHz Trunked
- Nortel Companion Phones
- Corelar Wireless Phones
- SpectraLink PCS Phone System with 451 Motorola 2-Way Radios
- Cobalt
- Home DX200
- CATS DWIS (evaluated, but not formally tested)
- Eartec Communications Systems
- Clear Com communications Cell Com 10 Digital Wireless System

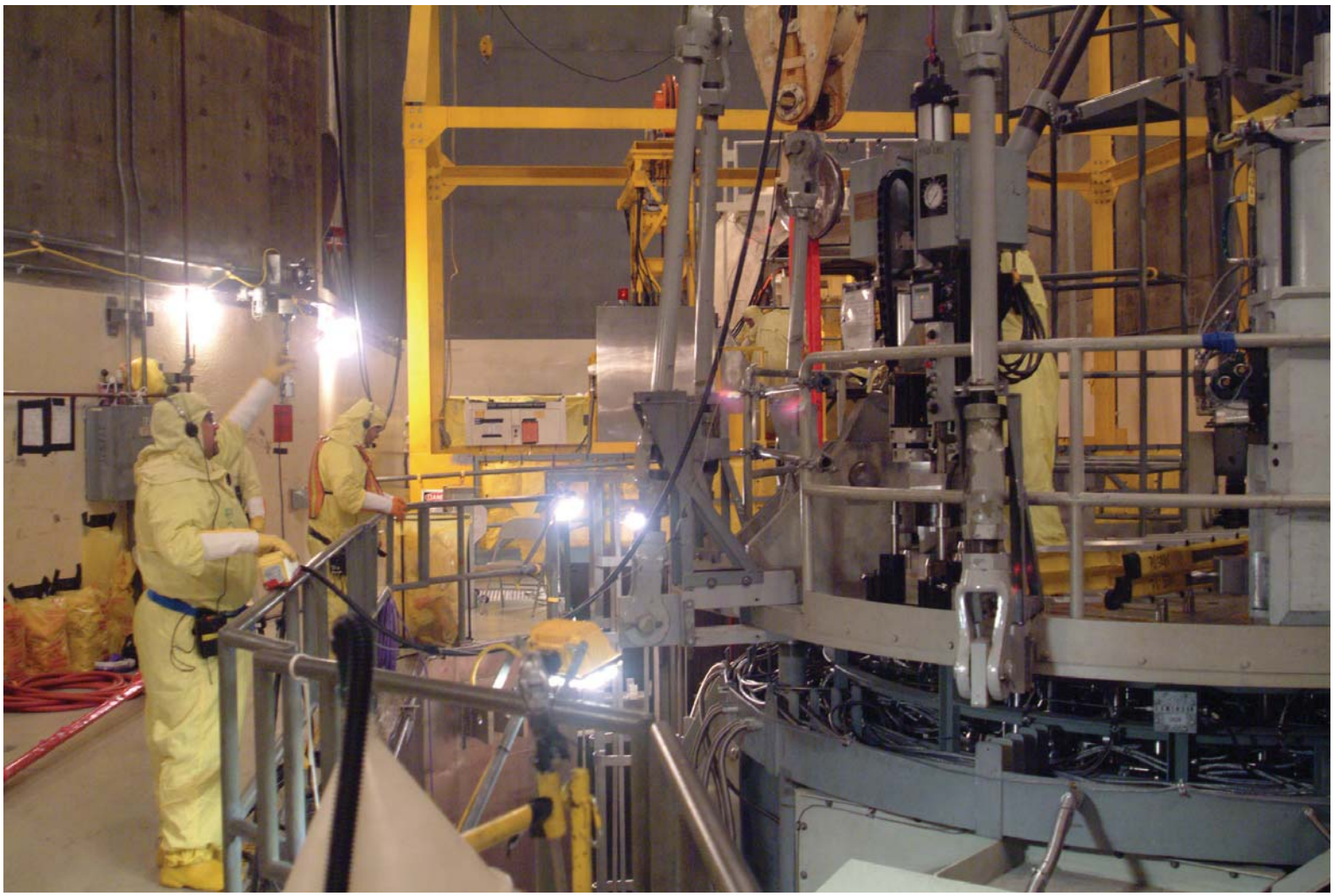
Exhibit 2:
Plant Operators' Comments on Non-Telex Equipment

- Refueling activities require full duplex, immediate response communications that cannot be achieved with push to talk equipment. Other full duplex equipment that has been investigated has capacity limitations with associated access points.
- The durability and flexibility does not match the TELEX. Also, the non-TELEX units cannot operate enough units at one time.
- Alternative headsets do not have noise reduction microphones.
- We have not been able to obtain the coverage areas that we currently have with the Telex equipment.
- The most significant drawback for non-Telex equipment is the inability to deploy an antenna system to provide adequate reception coverage to support various work groups on independent channels.
- Non-Telex equipment has signal issues (e.g. interference) in buildings with round ceilings.
- Non-Telex equipment is not compatible with a digital audio matrix and causes interference to other 1.9 or 2.4 GHz equipment. We did test digital wireless Intercom 1.92 GHz to 1.93 GHz frequency bands. There was a critical failure in the containment dome at the station tested. Given the structure of the dome, we found 100% packet loss for the digital signal.
- Interference with sensitive instrumentation, unable to cope with high-noise environment, are all issues with non-Telex equipment.
- Non-Telex equipment will not work on refueling floor or in reactor head area due to multipath distortion from reflections from containment dome.
- Non-Telex equipment limited on number of users and unacceptable interference.

EXHIBIT B

Telex

FIRE RETARDANT



DANGER

EXHIBIT C

Federal Communications Commission
Washington, D.C. 20554

October 1, 2010

DA 10-1909

Mr. J. Jeffrey Craven
Thompson Coburn LLP
1909 K Street N.W., Suite 600
Washington, D.C. 20006-1167

Subject: Request to Modify Conditions on Waiver Granted in ET Docket No. 10-24

Dr. Mr. Craven:

This is in response to your letter dated September 23, 2010 requesting a modification of the waiver that permits the operation of low power auxiliary devices without a license in the television band on frequencies below 698 MHz. You state that this modification is needed to permit the use of Telex headsets within nuclear power plants in those instances where all of the terms of the waiver are not satisfied.

On January 14, 2010 the Commission adopted a Report and Order and Further Notice of Proposed Rulemaking addressing the use of low power auxiliary devices in the television bands.[1] In the Report and Order, the Commission granted a waiver of its rules to permit such devices to operate within the television bands on an unlicensed basis on frequencies below 698 MHz until additional rules are adopted. In order to qualify for the waiver the low power auxiliary devices must meet a number of conditions including: 1) the transmitted power is limited to 50 mW; 2) the devices must maintain a specified separation distance from co-channel television transmitters; and 3) the equipment must be certified to meet the Commission's Part 74 technical standards.

In your letter you state that nuclear power plants have clearly established that they have a need to use the Telex headset systems and that a limited modification of the waiver is needed to protect plant workers from radiation and to preserve safe plant operations. You note that a significant number of plants are not able to meet the separation distance from television transmitters required by the waiver for a large portion of their equipment. You state that from 2007-2010 the plants have used the Telex equipment under a consensus plan endorsed by NAB, MSTV, and SBE and that there has not been one allegation of interference. The consensus plan permitted indoor operation at up to 100 milliwatts with no frequency coordination.

It is a well-established principle that the Commission will waive its rules in specific cases only if it determines, after careful consideration of all pertinent factors, that such a grant would serve the public interest without undermining the policy the rules are intended to serve. *See WAIT Radio v. FCC*, 418 FCC F.2d 1153 (D.C. Cir. 1969). Furthermore, in the January 15, 2010 Report and Order the Commission explicitly delegated authority to the Office of Engineering and Technology and the Wireless Telecommunications Bureau to modify the waiver on a case-by-case basis to permit entities to operate

[1] Revisions to Rules Authorizing the Operation of Low Power Auxiliary Stations in the 698-806 MHz Band, *Report and Order and Further Notice of Proposed Rulemaking*, 25 FCC Rcd 643 (2010).

low power auxiliary devices at power levels higher than 50 mW where it can be shown there is no significant risk of harmful interference to other users of the spectrum. Modifying the waiver conditions to allow use of Telex headsets inside nuclear power plants will serve the public interest by ensuring that personnel working inside these plants have essential equipment for critical communications.[2] In granting this modification of the waiver conditions we recognize that these devices employ relatively low power and nuclear power plants are physically separated from receivers that could potentially receive interference. The potential for interference will be further reduced by the fact that the modification that we are granting here will permit operation of the Telex headsets only inside of buildings at the nuclear power plants. As you note, Telex headsets have been used at nuclear power plants for over six years without any reported case of interference.

Accordingly, pursuant to authority delegated in sections 0.31 and 0.241 of the Commission's rules, 47 C.F.R. §§ 0.31, 0.241, and section 1.3 of the Commission's rules, 47 C.F.R. § 1.3, the waiver granted in WT Docket Nos. 08-166 and 08-167 and ET Docket No. 10-24 on Janurary 14, 2010 to permit use of unlicensed low power auxiliary devices in the television bands is modified as follows. The use of low power auxiliary devices will be permitted on television frequencies below 698 MHz inside of nuclear power plants subject to following terms and conditions:

1) Such devices shall be limited to a transmit power of 100 mW.

2) Such devices shall only be operated within buildings.

3) Such devices may be operated without regard to the television station co-channel separation distances specified in the waiver granted on January 10, 2010.

4) Such devices in all other ways must comply with the terms of the waiver granted on January 14, 2010 in ET Docket No. 10-24.

If you have any further questions, please contact Nicholas Oros, Spectrum Policy Branch, Policy and Rules Division, via email at Nicholas.Oros@fcc.gov or via phone at (202)418-0636.

Sincerely,

Julius Knapp
Chief
Office of Engineering and Technology

Ruth Milkman
Chief
Wireless Telecommunications Bureau

[2] The Nuclear Energy Institute and Utilities Telecom Council have previously stated that there are no suitable alternative means of communication. *See* Reply Comments of the Nuclear Energy Council and Utilitites Telecom Council, WT Docket 09-174, ET Docket 05-345, filed Nov. 5, 2009, at 11-15.