

# EXHIBIT A

**BACKGROUND AND JUSTIFICATION FOR  
WAIVER OF CERTAIN FCC RULES AND  
EXPANSION OF THE PART 74 ELIGIBILITY  
REQUIREMENTS TO ALLOW CONTINUED USE OF  
TELEX EQUIPMENT AT  
U.S. NUCLEAR POWER PLANTS**

September, 2010

# Regulatory Background

- April 2003 –April 2005: FCC approves use of Telex equipment at nuclear plants via Special Temporary Authorization ("STA") and FCC 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.

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

- 104 Nuclear Power Plants operate at 65 separate locations nationally, generating 20% of U.S. electricity.
- Nuclear plants present an ultra-challenging and unique wireless communications environment (e.g., four foot thick outer walls, containment building's domed ceiling; dosimeters, 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 indoor 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 radio's signal travels line-of sight and dissipates rapidly. Plant building walls are thick enough to keep radiation inside and thick enough to keep Telex signal inside. Potentially interfering signals stay outside.
- 50% of the nuclear plants use Telex equipment only during outages; 25% use it two to three times per month for maintenance; 10% use it weekly.
- For 7 years, plants have used Telex equipment - indoors and outdoors - with not one single incident of interference. From 2007-2010 the plants operated pursuant to the Consensus Plan co-authored with MSTV, NAB and SBE, allowing operation indoors (without any frequency coordination), and outdoors (following frequency coordination).

## **No 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 from 2003-2009 is attached as Exhibit A to this power point. Exhibit B provides quotes from plant representatives regarding the shortcomings 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 (as low as reasonably achievable) 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.

# **Relief from Portions of “Blanket Waiver” Order and Expansion of Eligibility Under Part 74 Are Necessary**

- NEI and UTC accept the FCC’s terms for the plants to transition from the 700 MHz frequency bands, as set forth in the newly issued Experimental Licenses.
- NEI and UTC seek FCC support to operate Telex Equipment *below* 700 MHz on the same basis as the earlier Experimental Licenses and the Consensus Plan which was co-authored by NAB, MSTV, and SBE and which worked perfectly from 2007-2010.
- Specific relief requested:
  - Immediate relief from the co-channel separation requirements and 50 mW power level cap for INDOOR OPERATIONS.
  - Expedited action on the Commission’s proposal to expand Part 74 eligibility so that nuclear plants can be licensed for indoor use, on all available frequencies.

# Attachment A: Potential Alternatives

## Tested 2003-2009

- 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 Spectra-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

## **Attachment B: 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 draw back 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.