

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

NUCLEAR ENERGY INSTITUTE
and
UNITED TELECOM COUNCIL

Request for Waiver to Permit
The Use of Certified Wireless Headsets and
Intercom Devices at Nuclear Facilities

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) ET Docket No. 05-345
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To: The Acting Chief, Office of Engineering and Technology

REPLY COMMENTS OF THE NUCLEAR ENERGY INSTITUTE
AND UNITED TELECOM COUNCIL

Ellen C. Ginsberg
Vice President and General Counsel
Nuclear Energy Institute
1776 Eye Street, N.W.
Washington, DC 20006-2946
Tel: (202) 739-8140
Fax: (202) 785-1895
Email: ecg@nei.org

Jill M. Lyon
Vice President and General Counsel
United Telecom Council
1901 Pennsylvania Avenue, N.W.
Fifth Floor
Washington, DC 20006
Tel: (202) 872-0030
Fax: (202) 872-1331
Email: jill.lyon@utc.org

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SUMMARY

The Nuclear Energy Institute (“NEI”) and United Telecom Council (“UTC”) (collectively, the “Proponents”), on behalf of their members that own and operate the nation’s nuclear power generation facilities, seek the right to continue to use certain wireless headset equipment that operates on Part 74 broadcast auxiliary spectrum. The equipment at issue, manufactured by Telex Communications, Inc., significantly contributes to minimizing radiation exposure of workers and ensuring the safe handling and movement of nuclear fuel. The Telex equipment is used primarily, although not exclusively, during the approximately month-long process of refueling nuclear power reactors, which occurs at each reactor every 18-24 months. The Telex equipment operates at extremely low power, in the cluttered, equipment-filled, nuclear power plant environment, mostly on large campuses, located substantial distances from potential uses of this spectrum by licensed Part 74 operators. Access to the Telex equipment is tightly controlled by the plant operators; no one is taking the equipment home to use on the weekends for family fun and recreation.

The FCC authorized the nuclear industry’s use of Telex equipment some three years ago and has continued to allow its use under a series of Special Temporary Authorizations (“STA”), the latest of which expires on April 7, 2006. During this extended “test period” there have been no complaints about harmful interference, or indeed any interference, traced to the use of the Telex equipment by nuclear power plant operators. There have been no objections to the continued grant of the STAs by licensed users of the spectrum or their representatives. Indeed, when the Commission last considered a request for a longer-term authorization, the Commission’s decision did not cite opposition from any party, but rather concluded that the record developed at the time did not support such relief. Accordingly, the FCC has continued to provide authority through the issuance of STAs.

Even those who have now come out of the woodwork to oppose the Proponents' request would apparently be content for the STA process to continue. However, the Proponents believe, based on the record now developed, there is ample basis and rationale for ending the ongoing uncertainty about whether or not the Commission will continue to grant such short-term relief. The planning and implementation of nuclear fuel outages is complicated enough without the ongoing questions of whether this critical communications equipment will be available for the refueling process. That said, the Proponents request no greater authority or status than they currently have (i.e., operation on a secondary, non-interfering, basis). They need, however, more regulatory stability.

The Proponents, at the urging of the Commission, examined available substitutes. Many, in fact, had already been tested by the plant operators, but were found wanting in some respect when compared to the Telex equipment. Decisions to discard equipment effectively used in sensitive processes at nuclear plants are not lightly made, and certainly not based on Internet "research" or 2-page sales brochures. The Proponents determined that a major manufacturer of wireless equipment could not provide an adequate substitute from its current product line and that reconfiguring its existing products to meet the plants' needs could take a substantial period of time, assuming the limited market would justify such research and development efforts. Any potential substitutes must be real world tested to ensure successful operation in the unique environment of nuclear plants. The Proponents efforts to identify substitutes for the Telex equipment have been thorough and form a credible foundation for grant of the requested relief.

Claims of the prospect for interference and frequency usurpation are wholly unfounded. The last three years demonstrate that Telex equipment, as operated at nuclear plants, does not cause interference or require commitments of additional, dedicated spectrum. The Opponents themselves concede this for indoor use at the plants. In addition, the Proponents have demonstrated that even

the limited, controlled outdoor use, primarily in connection with the movement of spent fuel, is not a threat to licensed users.

The Proponents' request is not for some frivolous purpose of company convenience. Dose reduction and safe fuel movement at nuclear plants are matters of utmost importance to the workers themselves, to the Nuclear Regulatory Commission ("NRC") (the agency that regulates the plants), and to the general public. Based on the record over the last three years and developed in this proceeding, the Commission should not deprive the nuclear industry of the right to greater regulatory and operational certainty by using the Telex equipment to help meet those important goals.

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In accordance with FCC Public Notice, DA 05-3216, released December 16, 2005,¹ the Nuclear Energy Institute (“NEI”) and United Telecom Council (“UTC”) hereby reply to the opposing comments filed in the captioned proceeding by the Society of Broadcast Engineers, Inc. (“SBE”), the Association For Maximum Service Television, Inc. and the National Association of Broadcasters (filing jointly) (“MSTV/NAB”) and the New America Foundation, Champaign Urbana Wireless Network and Free Press (collectively, “NAF”).² For the reasons set forth below, the Proponents respectfully submit that the Opponents have failed to rebut or undermine the reasoned

¹ 20 FCC Rcd. 20035 (2005).

² Comments in support of the Request were filed by Energy Northwest; PPL Susquehanna, LLC, Arizona Public Service Company; Nuclear Management Company; Dominion Resources, Inc., PSEG Nuclear; Wolf Creek Nuclear Operating Corporation, Exelon Generation Company, LLC and Progress Energy (collectively referred to as the “Supporters”). NEI and UTC are collectively referred to as the “Proponents” herein. Those filing opposing comments are collectively referred to herein as the Opponents.

justifications for the captioned waiver request (“Request”). Therefore, the Commission should promptly grant the Request.

I. Background – History and Context of Use.

In assessing the validity of the Opponents’ arguments, the Commission must recall the background history and context of the Request. In April 2003, the Commission issued the first in a series of Special Temporary Authorizations relating to nuclear plant use of the Telex Communications, Inc. (“Telex”) equipment at issue.³ In November of 2004, the Commission declined to grant Telex a permanent waiver request because, at that time, such a waiver was “not supported by the record currently before us.”⁴ However, the Commission granted an identical STA to the NEI in April of 2005 and renewed that STA in October of 2005. In the meantime, in July of 2005, the Proponents, whose members are the actual operators of the nuclear plants making use of the Telex equipment, had filed the Request, reflecting a substantial effort to address the areas of the record which the Commission previously had found unsupported.

During this entire period – approaching three years – there was no opposition raised to the Commission by the Opponents or any others against the Commission’s initial and continued grant of the STAs. Nor, to the Proponents’ knowledge, have there been any reported incidents of harmful, or for that matter any, interference with the operations of licensed users of the spectrum covered by the STAs. The Opponents point to none.

³ The initial STA was granted to Telex Communications, Inc., the manufacturer, of the equipment, in early April 2003 and was subsequently extended ultimately through April 7, 2005. *See In the Matter of Telex Communications, Inc.*, DA 04-3691, 19 FCC Rcd. 23169 (Pub. Safety and Critical Infrastructure Div., 2004), ¶2, n. 6 (“*Telex Order*”).

⁴ *Telex Order*, ¶ 8.

This successful co-existence reflects the limited nature and scope of the use of the Telex equipment at nuclear facilities. As outlined in the Request,⁵ and reinforced by the Supporters, use of Telex equipment occurs at a limited number of locations around the country. These plant locations (ranging in size from 400 to 1000 acres) are large sites, with multiple concrete and hardened structures. The vast majority of the plants are not proximate to major cities or other areas of highly concentrated population.⁶ The use of the Telex equipment is intermittent and periodic, concentrated during refueling outages when, among other maintenance and refurbishment activities, “spent” nuclear fuel is removed and replaced with “fresh” fuel. These outages can last anywhere from 3-6 weeks, or less.⁷ The Telex equipment is operated at decidedly low power levels; less than a quarter of a watt.⁸ Access to and use of the equipment is carefully controlled by the nuclear plant operators.⁹ Finally, and most importantly, the Telex equipment is used for a critical purpose, involving plant worker safety, as described in the Request. None of the Opponents have questioned, or can realistically question, the validity of that purpose and the needs of nuclear plant operators for capable equipment in such circumstances.¹⁰

⁵ Request, at pp. 4-10.

⁶ Even the maps attached to the SBE’s Comments as Figure 1 generally show several miles or more to the nearest communities listed on the map. And there is no indication of the size or the presence of broadcast operations in those communities.

⁷ As noted by the SBE Comments, in some instances as short as 15 days. SBE Comments, at p.3, ¶ 11.

⁸ SBE conceded that operations at these levels within the nuclear containment facility itself raised no risk of interference. *Id.*, at p.3, ¶ 9.

⁹ In the *Telex Order*, the Commission had questioned its ability to rely on Telex’s statements and representations on this subject. *Telex Order*, ¶ 6. Such is not the case here as it is the nuclear plant operators themselves who are directly relating their practices. These practices do not permit the Telex equipment to leave the site (except for those very limited circumstances when it is used in the training buildings) and require that it be accounted for after each use.

¹⁰ Just as nuclear plant operators are not in the business of running broadcast enterprises, such enterprises cannot be in the business of telling nuclear plant operators how to run or what is needed to run their facilities safely.

II. Nature of Authority Requested – Principal Opposition Is Constructed on a False Premise.

Having remained silent for the last three years, at least some of the Opponents justify their emergence from hibernation by what they perceive to be a fundamental change in the nature and status of the authority the Proponents now seek. Most specifically, SBE explains that:

“[B]ecause an experimental STA would be secondary to licensed low power auxiliary (“LPA”) stations, SBE was not too concerned about the grant. But now the issue is whether NPP (plant) operators should be granted co-equal LPA licenses. This is an entirely different issue, and one with potentially negative consequences to the authorized users of Part 74 LPA frequencies. First, because of the 60 or so new, co-equal licenses that might potentially be created, and second because of the precedent such a waiver would establish.”¹¹

However, this explanation mischaracterizes the issue and misconstrues the scope of the Request. The Proponents seek no more operational authority or status for the nuclear plant operators than those which the plant operators currently have (and have had for nearly three years) under the STAs; they only seek it on a longer-term basis. The Request does not seek co-equal Part 74 licensee status for the nuclear plant operators. The Proponents seek merely the right for plant operators to continue to use the Telex equipment on the Part 74 spectrum as currently permitted: on a basis that is “secondary to licensed low power auxiliary stations” (i.e., subject to a non-interference condition). As a matter of logic, this limitation, one that made the STAs substantively acceptable to SBE, should erase both of the “potentially negative consequences” cited by that Opponent.

But then why not a continuing series of STAs, as the Commission has previously approved and the Opponents have accepted, over the last three years? The prime reason is the plant operators’ need for operational and regulatory stability in the planning and carrying out of nuclear

¹¹ SBE Comments, ¶ 16.

refueling operations. The 6-month limitation on the duration of the STAs does not contribute to thoughtful planning for the plants' next outage, which is usually a year, to a year and a half, after the previous outage. Given the fact that there are 18-24 months between outages, the plant managers – responsible for the safe and successful operation of the plant and its workers – are increasingly uncomfortable with the notion that, after any given 6 month period, the STA could potentially expire without FCC renewal and leave the plant managers scrambling to figure out how to identify, test, secure, deploy and successfully train its staff on new wireless equipment, for use during the next outage.¹² Indeed, the Proponents have already begun to receive from certain plants concerned inquiries about their ability to rely upon use of the Telex equipment in their plans for the upcoming spring refueling cycle. The Request is precisely intended to remove that worry from what is already a complex and compressed planning process.¹³

III. The Proponents Are Not “Gaming” The FCC’s System or Forum Shopping.

All of the Opponents assert that the Request is “gaming” the FCC’s regulatory process and rules.¹⁴ Nothing could be further from the truth. To the Proponents and their members, maximizing the safety of industry workers and safe operations of nuclear plants is anything but a “game.” The nuclear industry is the most highly regulated industry in America, with virtually its every action closely scrutinized by the Nuclear Regulatory Commission (“NRC”). Consistent with

¹² Moreover, it is not clear that the Commission, consistent with the rules under which STAs are granted, could provide the necessary stability by agreeing “up front” to grant such a series of STAs spanning 5 years.

¹³ The Request is also a vehicle to avoid the Commission being forced to deal with a series of individual requests from individual operators or even individual plants.

¹⁴ MSTV/NAB at pp. 1-4; NAF at pp. 1-2; SBE at pp. 1-2.

the NRC's regulations, the nuclear industry is obligated to ensure worker and plant safety by reducing and controlling risks in operating these facilities.¹⁵

This compliance-oriented attitude carried over to the use of the Telex equipment. The Proponents proceeded in good faith when the Commission concluded that the record could not support the grant of a waiver some 18 months ago. In order to justify the relief it sought, the Proponents have undertaken to build a record concerning the unique wireless telecommunications requirements of nuclear facilities, and the unique performance features found in the Telex equipment that have become so important to reducing worker radiation dose. The Proponents filed for and received extensions of the STAs which were available on the Commission's web site for all to see. There is no record of any objection to the STAs by any of the Opponents (including any low power auxiliary licensee). It is clear that the SBE was aware of them because it has indicated that it did not find them objectionable.¹⁶

Nor, as the Opponents would have the Commission believe, have the Proponents engaged in "forum shopping." Upon learning of the denial of Telex's waiver request, NEI retained counsel, coordinated with its member representatives, and conducted a number of meetings with FCC representatives, including at various times representatives of the Office of Engineering and Technology ("OET"), the Media ("MB") and Wireless Telecommunications Bureaus ("WTB") and the Chairman's office (including both wireless and media assistants). This was a forthright effort to

¹⁵ The NRC has a long-established regulation that requires nuclear plant operators to adhere to an "as low as is reasonably achievable" ("ALARA") goal. That requires making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical and consistent with the purpose for which the licensed activity is undertaken, taking in to account the state of the technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest. 10 C.F.R. §20.1003.

¹⁶ See n. 10, *supra*. Nor, to the Proponent's knowledge, did any of the Opponents file comments against Telex's request for waiver.

educate further the responsible Commission Staff about the singular issues associated with the plants' use of the Telex equipment and its unique capabilities for helping plant operators protect workers from excessive exposure to radiation. The FCC solely decided who attended those meetings and which office would handle this matter; the Proponents had no control over that decision and made no effort to influence it. A division of the WTB had handled the prior waiver request, but OET had handled the STAs granted to Telex and, more recently, to the NEI.¹⁷ The Opponents "forum shopping" argument is specious.

IV. Equipment Substitutes Are Not Currently Available.

The Opponents belittle the good faith efforts to identify substitutes for the Telex equipment, dismissing out of hand the Proponents assertion that they had undertaken an exhaustive industry study. The Opponents submit that nuclear plant operators ought to trust a simple Internet search to identify several products available that could "easily replace/substitute" for the Telex equipment.¹⁸

The Proponents respectfully submit that, just as no broadcaster would perform due diligence over the internet for sophisticated equipment to be used in its studio, no nuclear plant operator would or should rely on internet research, or a two page sales brochure, to determine the type of replacement telecommunications equipment to purchase and operate along side highly sensitive technology in order to promote worker safety. The Telex equipment's functionality has been proven.¹⁹ The facts are that the Proponents filed the Request in order to be allowed to utilize the

¹⁷ The Chief of the Private Wireless and Critical Infrastructure Division of the WTB, which issued the *Telex Order*, actively participated in the initial and at least one other meeting with NEI.

¹⁸ MSTV/NAB, at pp. 4, 8-9; NAF, at pp. 3-4; SBE, at pp. 10-12.

¹⁹ The commercial nuclear industry has no stake in what entity provides it with this equipment. To the contrary, if there were many manufacturers of equipment that performed precisely as does the Telex equipment, the industry arguably

wireless headset equipment that advances the NRC's ALARA standard²⁰ by reliably reducing worker exposure to radiation, without interference to licensed operations.

NEI did, in fact, undertake a thorough survey to determine all of the other telecommunications technology that had been tested and used inside the plants. It is the Proponents judgment that this is the only appropriate way to identify potential substitutes for the Telex equipment. Any substitute would be required to offer a combination of nine (9) performance features, a combination that plant operators indicated is essential if the alternative equipment is to become a true substitute.²¹ These are the Required Features that allow the nuclear plants to most effectively advance the NRC's ALARA standard in this area by maximizing the reduction of worker exposure to radiation during such operations.

Some twenty-four (24) different potential substitutes, ranging from Part 90 equipment to cellular telephones, to wired equipment to wireless equipment operating on unlicensed spectrum were identified in the survey. The analysis found that each of the technologies and/or equipment considered fell short of consistently meeting all of the Required Features.²²

The Opponents suggest that the HME, the Clear-Com CellCom and the CATS DWIS products are readily available, one-for-one substitutes for Telex. This is not based on any testing by

would have the opportunity to benefit from the competition while retaining the safety advantages described herein. Thus, the nuclear industry's interest in the Telex equipment stems solely from its unique and proven performance.

²⁰ See n. 15, *supra*.

²¹ The features are: wireless, hands-free, full duplex/multi-users, reliable/no call drop; no background noise, no inadvertent actuation, uninterrupted voice transmission, ease of use and durability. See Request, at p. 7 ("Required Features"). As the Proponents told the Commission on several occasions, a nuclear plant is not an environment in which anything less than a perfect score is acceptable.

²² The potential substitutes tested included several also suggested by the Commission Staff. It is also important to note that the plants' operating environments vary, based upon the type of nuclear reactor system (i.e., boiling water reactors versus pressurized water reactors).

the Opponents of the equipment in the nuclear plant environment or, for that matter anything other than a relatively basic analysis (e.g., internet research and sales brochures). As a result, the Proponents respectfully disagree with the Opponents superficially derived conclusions.

Based on NEI's survey and additional examination, HME is not a substitute for the Telex equipment. The plant surveys raised questions about HME's capabilities to offer uninterrupted transmissions, durability and ease of hands-free operation. Moreover, HME operates at 2.4 GHz - the same frequency band as many wireless dosimeter devices²³ - and thus, could interfere, or worse, shut down, one or both wireless systems when operated in close proximity (which is the case in the plants) with each other.

Moreover, SBE acknowledges that the HME equipment would have to be reconfigured if it were to be used in the plants.²⁴ SBE does not claim such reconfiguration is easily undertaken or accomplished. Nor does SBE offer an opinion about whether such a reconfiguration would affect the electronic dosimeters which, as noted above, are also essential to monitoring and reducing radiation dose to workers. Given the current state of technology and product development, together with the unique circumstances presented in the nuclear context, one-for-one substitutes have not come easily. Any substitute equipment will have to be fully evaluated, and tested in real world situations (e.g., in the plants), without running the risk of actuating other sensitive plant technology.

²³ Dosimeter devices are worn by plant workers, along with the Telex equipment, as they operate in areas of the plants where there is the potential for exposure to radiation. Dosimeters measure the dose of radiation and transmit the data to the plant's control room.

²⁴ "However, because the top portion of the 2.4 GHz Part 15 band is shared with TV BAS Channels . . . , as well as Public Safety users, the HME headsets, if selected, would have to be configured to only use the non-co-channel, lower portion of the 2.4 GHz Part 15 band . . . This is necessary to ensure that 2.5 GHz electronic news gathering (ENG) operations, or 2.5 GHz Part 90/Part 101 police tactical video down links (TVDLs) not cause interference to 2.4 GHz Part 15 devices at a NPP" (plant). SBE Comments, at p. 11, ¶ 32.

While Clear-Com's CellCom system may not have specifically been among the 24 potential substitutes previously considered by the plants, a number of industry comments raise doubts about CellCom's suitability as a substitute for the Telex equipment. Specifically, questions have been raised about the Clear-Com CellCom system's limited range; the need for multiple proximate (within 100 feet) antennas; and large belt packs that may not be suitable for close quarters in certain areas involved in refueling operations. Forcing nuclear plant operators to use such a system would appear to be a downgrade, and certainly not a reasonable substitute for the Telex equipment.

CAT's DWIS product was not identified in the NEI's survey, but is described as "virtual hands-free." Hands free capability is critical when workers are handling or moving nuclear fuel. Also, like the HME device, CAT's DWIS operates in the 2.4 GHz band and, accordingly, will raise the same issues noted by the plants regarding potential interference to the sensitive dosimeter devices and could also require the same reconfiguration the Opponents acknowledged would be needed for the HME equipment. In addition, because CAT's DWIS product appears to be most often used outdoors, there is no assurance that it will be able to operate reliably amidst massive concrete walls and other heavy equipment, or whether it will suffer from signal dispersion inside the plant. Clear, uninterrupted communications are necessary to implement, *inter alia*, the ALARA principles.

NEI also went beyond its members' own experiences in search of existing systems that would replicate the Required Features provided by the Telex equipment. NEI contacted a major wireless technology company in September 2005 to determine whether the company (a manufacturer of wireless headset technology) had equipment that was a ready substitute for Telex, or if it could retrofit one or more of its current wireless headset system products to serve as such a substitute. The ultimate answer was that none is currently available. When NEI inquired of this

same company about the timeline for reworking a current product to operate in the unlicensed or alternate licensable spectrum, the answer was that it could take a eighteen (18) months or more, assuming the company would even undertake such an effort, given the relatively small potential “purchasing audience” offered by the nuclear plants.²⁵

Contrary to what the Opponents imply, the products they suggest do not constitute a showing that there are now substitutes for the Telex equipment. The Proponents developed a credible, substantive record on this issue that addresses the Commission’s doubts that existed at the time of the *Telex Order*. The fact that at some point in the future, with certain changes in market conditions for these products, substitute equipment could or might become available should not be a basis for the denial of the Request at this time.

V. **There Is No Evidence Of A Threat Of Harmful Interference.**

SBE challenges the Proponents’ claim that the plants’ use of the Telex equipment does not cause harmful interference by nitpicking NEI’s choice of words, but not the outcome. The uncontested fact is that none of the Opponents offered *any* evidence that the plants’ use of the Telex equipment (under the STAs since 2003) has resulted in *any* interference. Implicit in SBE’s criticism of the characterization that the Telex signal attenuates to “zero” (rather than to a number that could not cause interference), is SBE’s recognition that the current use of Telex equipment by the plants has not caused any interference to broadcasters or anyone else.²⁶ Again, the fact is that none of the Opponents describe or claim a specific incident of *any* interference as a result of use of the Telex equipment by the plants over the last three years as authorized by the FCC pursuant to STAs.

²⁵ The limited nature of the market would likely be a barrier with any manufacturer retrofitting or producing specialized equipment for the “nuclear plant” market.

²⁶ SBE Comments, at p. 6., ¶ 18.

SBE also claims that NEI had asserted that “encryption” of wireless intercom communications “is a critical system feature.”²⁷ The Proponents never used the word encryption in the Request. The full scope of the Required Features tracks exactly the Proponents’ definition in the Request. Perhaps SBE employed this unsupported claim in an effort to refute the Proponents’ engineering demonstration that the Telex equipment – as operated by the plants – does not interfere with broadcast transmissions. The Proponents’ engineer used the proper, relevant Telex equipment in his analysis; encryption is not a Required Feature and thus the BTR-600 was not required.

SBE then goes further to assert that, because the Telex *website* reveals that there exists an *option* to add to the Telex equipment an external transmitting antenna, the Proponent’s plants *must* be using (or will use) the external antennas. Based upon this string of hypotheticals, SBE concludes that the range of the resulting transmission is expanded substantially.²⁸ This is also false because it is not the manner or method by which the plants use the Telex equipment. Further, given NRC regulatory limitations, licensees just don’t willy nilly place antennae in and around nuclear plants. SBE offers no evidence to the contrary. As outlined above, the Proponents are seeking authority to use the Telex equipment as they are currently authorized to do so under the STAs. SBE’s antennae gain argument is another red herring.

SBE also declares that, given the fact that the STAs allow transmissions to 250 mw, with no antenna gain limitations or height restrictions, even higher ERPs would be capable of being employed, again enhancing interference prospects. SBE never raised this concern before, during the nearly three years that the STAs have been in existence. Now it is suddenly a disaster in the making. The Proponents do not seek higher ERP. The Request describes how the plants use and operate

²⁷ *Id.*

²⁸ *Id.* at p. 7, ¶ 19.

the Telex equipment. The Request seeks nothing more. The SBE's predictions are inconsistent with reality.

The Opponents' assertion that the mere potential for interference justifies denial of the Request rings hollow. Nearly three years of actual experience – nuclear plants using the Part 74 frequencies without interfering with licensed operations – should be the more relevant, even decisive, factor. The Proponents' willingness to continue to use the Telex equipment under the same operational limitations specified in the STAs – rather than as a co-equal Part 74 licensee – logically must relieve the Opponents' concerns.

VI. The Proponents Have Not Lacked Candor.

SBE challenged the Proponents' candor regarding several of statements in the NEI STA filing and the Request. In its STA application, NEI responded to the query "Purpose of Operation" by stating "Operation of wireless headsets and intercom devices within nuclear power facilities." Unlike a radio or television station, which might be housed in a single building, a nuclear power facility does not consist of a single building, but a large site with a variety of buildings and equipment. NEI did not state that use of the Telex equipment would be strictly confined to the containment building or to any group of buildings; if that were the case, it would have said so. In fact, NEI's STA application stated that the use would include, among other things, the requirements for facilitating the "removal of radioactive waste" from those buildings.

In addition, SBE deems "inaccurate" NEI's characterization of where the nuclear plants are physically located. The Request states that "most (plants) are located in remote areas, far from population centers, broadcast facilities, studios or towers."²⁹ Perhaps SBE missed the reference to

²⁹ Request, at p. 4.

“most.” By ignoring this qualifier, SBE somehow calculated a Telex equipment signal footprint spanning 160 kilometers (“km”), crossing county, state and even national borders, all from plants using the Telex equipment at the power levels permitted. SBE did not reveal the formula or basis for its 160 km signal.³⁰ SBE’s wild prognostication is based on unfounded assumptions and ignores the parameters of the current and intended use of the Telex equipment, if the Request is granted.

The Opponents make a further charge against the Proponents by taking an earlier statement out of context and then misusing it. MSTV/NAB quotes a UTC letter as saying that use of the Part 74 equipment will not enhance plant security.³¹ However, as the Commission is well aware, UTC’s letter was written to clarify statements made in Telex’s original waiver request, in which it noted that use of its equipment was needed to meet increased Homeland Security responsibilities. There is no question that nuclear power plants are included among the nation’s thousands of most critical facilities for homeland security purposes; however, use of the Telex equipment, as outlined fully in the Proponents’ Request and here, was not undertaken to meet new security responsibilities. Plant owners are under a constant requirement to operate as securely and safely as possible and the Telex equipment, during its use for refueling and related operations, plays a significant role in making that possible.

VII. Continued Limited Outdoor And Offsite Use Should Be Permitted.

NAB/MSTV raises concerns about the plants’ outdoor use of the Telex equipment, asserting that such use possesses a greater risk of interference.³² While outdoor use may reasonably be expected to possess a “greater risk” relative to indoor use, the Proponents’ engineering showing,

³⁰ SBE Comments, at pp. 8-9, ¶¶ 24-27.

³¹ MST/NAB comments at 3, quoting UTC letter to the Office of Engineering and Technology, Experimental Licensing Branch, April 21, 2003.

³² NAB/MSTV Comments at pp. 6-7.

as well as three years of experience, demonstrates that outdoor use of Telex equipment – as conducted by the plants – does not result in actual interference.³³ As noted in the Request, “outdoor use is undertaken most frequently, in the context of moving the casks containing used fuel to the NRC-licensed auxiliary storage pads.”³⁴ For the relatively few plants that do periodically use the equipment outdoors, in most cases there is at least 2000 feet or more between the plants property line and the likely outdoor use area, a distance that, along with surrounding buildings and equipment, would contribute to substantial signal attenuation at the power levels involved.³⁵ The documented experience of non-interference under the STAs, the limited, but important, nature of this outdoor use, and the continued application of non-interference condition on such use, support outdoor use authorization, as part of the Request.

The Request further explains that a small minority of the plants also use the Telex equipment beyond the plants’ “protected area” for training on nuclear plant operations, at the simulator facility. The equipment is used during training sessions for maintenance “mock-up” training in which “real” work conditions are simulated. By mastering the use of the Telex equipment during these training sessions, plant workers are better able to effectively use the Telex equipment to reduce their exposure to radiation when they perform their actual tasks at the plants. This use is of course, indoors and tightly controlled. The training facilities are generally built with office building material (e.g., bricks and mortar), which the Proponents have demonstrated,³⁶ and even the Opponents must concede, has a substantial, immediate signal attenuation effect at the low powers levels involved.

³³ Request, at Exhibit C.

³⁴ Request, at p. 9.

³⁵ See n. 33, *supra*.

³⁶ See Declaration of Fred T. Short, attached as Exhibit 1.

VIII. Conditions To Plants' Use Of Telex Equipment.

The Opponents raise a variety of concerns regarding the methodology for any use by the plants of the Telex equipment. As noted above, the Proponents are prepared to accept the same conditions that have applied to their use of the Telex equipment under the STAs; conditions that the Opponents have lived with, without objection. The Opponents have failed to establish that any additional conditions are warranted. Experience and the FCC record confirm that conclusion.

IX. This Request Should Not Be Held Hostage To ET Docket 04-186.

From the start the NAF concedes “the importance of maintaining the safety of the nuclear power industry to our national critical infrastructure” and “the usefulness of the proposed devices to the nuclear industry.”³⁷ Indeed, NAF ultimately says that the waiver should be granted, but just for one year, in light of the pendency of ET Docket 04-186.³⁸ NAF is seeking to use the Request as leverage to obtain Commission action on that Docket. Whatever NAF feels would be best for unidentified “dozens of industries critical to our national security and economic well being,” the nuclear industry is a unique and special case. The relief requested by the Proponents should not be tied to, or lumped in with, decisions about other industries. They are perfectly capable of filing their own waiver requests and presenting a best case as to the merits of their desire to use the Part 74 spectrum on a secondary basis. However, the Proponents suspect that the uses NAF envisions would be much broader and for profit (“economic well being”) as opposed to narrow and limited in scope and for the purposes of worker safety. The Commission should reject the NAF’s attempt to have the Request held hostage to ET Docket 04-186.

³⁷ NAF Comments, at p.1

³⁸ *Id.*, at p. 11.

X. Conclusion – The Equities Decidedly Weigh In Favor Of Grant Of The Request.

Over the last year the Proponents have supplied the Commission with ample justification for a longer-term authorization to use the Telex equipment. Nuclear plant operators' continued need for reliable equipment to perform the tasks described is unquestioned. Not even the Opponents would presume to contend otherwise.

The Proponents have examined, in a reasonable and thorough fashion, whether there are substitutes for the Telex equipment. While certainly there is certain equipment that is equally capable of delivering certain features, the nuclear plant operators – who are in the best position understand and measure the critical capabilities – have concluded that, today, there does not exist any other equipment that has been tested and proven to deliver the Required Features found in the Telex equipment. The Opponents, who sat idly by for going on three years, now question that conclusion and ask the Commission to substitute the Opponents' judgment for those of the nuclear plant operators. The Opponents support their positions by unfounded claims of interference and the fear that they will be crowded out of their ability to use the spectrum by continued use.

The NAB/MSTV raises the equities of the situation and suggest a need to engage in a regulatory balancing act.³⁹ Proponents believe that their Request – as further clarified herein – is more than reasonable. This is not a bunch of football coaches trying to sneak a use of broadcasters spectrum so some plays can be relayed to the quarterback. This is about the safety of nuclear plant workers and NRC licensees' efforts to optimize safe conduct of sensitive activities, including the handling and movement of spent nuclear fuel. The equities in such a situation weigh decidedly against tying the hands or otherwise impeding the capabilities of those responsible for reducing nuclear plant workers' exposure to radiation.

³⁹ NAB/MSTV Comments, at p. 5.

In the final analysis, the Proponents respectfully submit that the experience developed under the STAs, coupled with the good faith assessment of available equipment substitutes, warrants the grant of the Request. The record, including the often shrill remonstrations of the Opponents, does not provide grounds for the Commission to substitute the Opponents' judgment for that of the operators of the nuclear power plants who assert that the continued, limited, controlled use of the Telex equipment – on a secondary, non-interfering basis – is necessary to maximize the safe operation of their facilities and to protect plant workers from harmful radiation.

Respectfully Submitted,



Counsel to Nuclear Energy Institute
Patton Boggs LLP
2550 M Street, N.W.
Washington, DC 20037-1350
Tel: (202) 457-6000
Fax: (202) 457-6315

Ellen C. Ginsberg
Vice President and General Counsel
Nuclear Energy Institute
1776 Eye Street, N.W.
Washington, DC 20006-2946
Tel: (202) 739-8140
Fax: (202) 785-1895
Email: ecg@nei.org



Jill M. Lyon
Vice President and General Counsel
United Telecom Council
1901 Pennsylvania Avenue, N.W.
Fifth Floor
Washington, DC 20006
Tel: (202) 872-0030
Fax: (202) 872-1331
Email: jill.lyon@utc.org

Exhibit 1

DECLARATION

I, T. Fred Short, am an Electrical Engineer at Special System Services ("SSS"), 1 Wayne Circle, Lower Gwynedd, PA 19002. SSS serves as a Consultant for Exelon, a nuclear plant owner that utilizes Telex equipment for certain communications needs. I hereby declare the following to be true under the penalty of perjury.

1. I am the author of the SSS letter dated March 3, 2005 (the "Letter") which the Nuclear Energy Institute submitted to the FCC as part of its request for waiver, in which I described the real-world testing of Telex equipment's signal strength when operated at and around nuclear plant buildings.
2. As a consequence of the testing described in the Letter, I am familiar with both the signal strength and the attenuation characteristics of the Telex equipment, in the context of a nuclear plant.
3. I am also familiar with the types of buildings that generally house training centers used by nuclear plants. Inside these training centers are the simulators that are used to train plant staff on the use of equipment, including the Telex equipment.
4. Based upon my knowledge and expertise, including the information obtained during the testing described in the Letter, the signal strength of Telex equipment, operated at 50 mw of output power inside a plant training center, would be reduced to one-quarter of its non-obstructed path strength as it passes through the building wall, to the outdoors. Accordingly, the signal from the base station and headset operated inside a training center would travel no further than 500 feet outside of the building, from the point nearest the Telex equipment operation.

Respectfully submitted,



T. Fred Short
Electrical Engineer
Consultant for Exelon

09/09/05

CERTIFICATE OF SERVICE

I, Tina M. Cruikshank, a legal secretary at the law firm of Patton Boggs LLP, Washington, DC, hereby certify that on this 30th day of January, 2006, a copy of the foregoing “**REPLY COMMENTS OF THE NUCLEAR ENERGY INSTITUTE AND UNTIED TELECOM COUNCIL**” is being sent via U.S. mail, first class postage paid, to the following:

Society of Broadcast Engineers, Inc.
9247 North Meridian Street, Suite 305
Indianapolis, IN 46260
Attn: Chris Scherer

Nuclear Management Company, LLC
700 First Street
Hudson, WI 54016
Attn: Scott Nelson

National Association of Broadcasters
1771 N Street, N.W.
Washington, DC 20036
Attn: Marsha J. MacBride

Dominion Resources Services, Inc.
Law Department – PH-1
P.O. Box 26532
Richmond, VA 23261-6532
Attn: John D. Sharer

Association for Maximum Service Television,
Inc.
P.O. Box 9897
4100 Wisconsin Avenue, N.W.
Washington, DC 20016
Attn: David L. Donovan

Troutman Sanders LLP
401 Ninth Street, N.W., Suite 1000
Washington, DC 20004-2134
Attn: Raymond A. Kowalski

Covington & Burling
1201 Pennsylvania Avenue, N.W.
Washington, DC 20004
Attn: Matthew S. DelNero

PSEG Nuclear
Nuclear Business Unit
N21, P.O. Box 236
Hancocks Bridge, NJ 08038
Attn: Jeffrie J. Keenan, Esq.

Media Access Project
1625 K Street, N.W.
Suite 1118
Washington, DC 20006
Attn: Harold J. Feld

Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839
Attn: Warren B. Wood

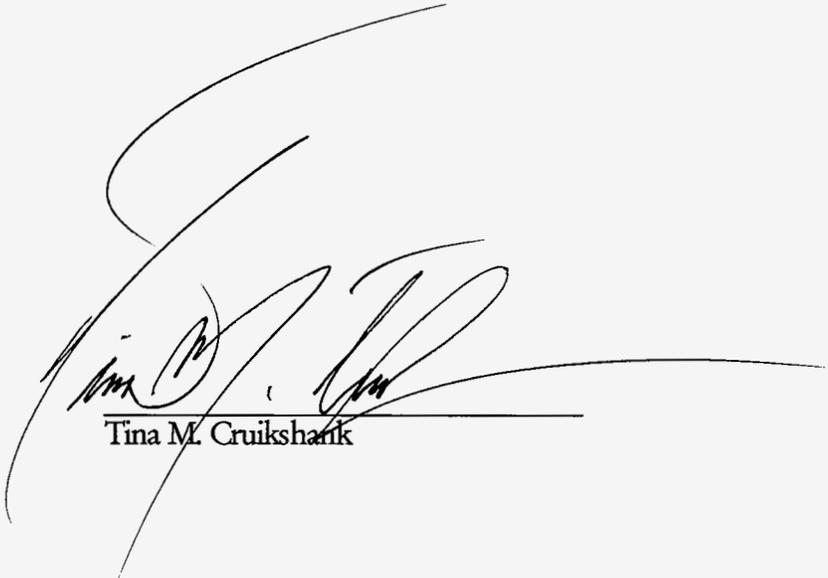
Energy Northwest
P.O. Box 968
Richland, WA 99352-0968
Attn: D.W. Coleman

Exelon Generation Company, LLC
10 S. Dearborn Street, 35th Floor
Chicago, IL 60603
Attn: Michael S. Pabian

PPL Susquehanna, LLC
769 Salem Blvd.
Berwick, PA 18603-0467
Attn: James G. Jessick

Progress Energy
P.O. Box 1551
411 Fayetteville Street Mall
Raleigh, NC 27602
Attn: Brian McCabe

Bennet & Bennet, PLLC
10 G Street, N.E., Seventh Floor
Washington, DC 20002
Attn: Donald L. Herman, Jr.



Tina M. Cruikshank