

VI. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the Agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practices and procedures, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: December 29, 2004.

Betty Shackelford,

Acting Director, Registration Division, Office of Pesticide Programs.

Therefore, 40 CFR chapter I is amended as follows:

PART 180—[AMENDED]

1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 321(q), 346a and 371.

2. Section 180.1071 is revised to read as follows:

§ 180.1071 Peanuts, Tree Nuts, Milk, Soybeans, Eggs, Fish, Crustacea, and Wheat; exemption from the requirement of a tolerance.

(a) General. Residues resulting from the following uses of the food commodity forms of peanuts, tree nuts, milk, soybeans, eggs (including putrescent eggs), fish, crustacea, and wheat are exempted from the requirement of a tolerance in or on all food commodities under FFDC section 408 (when used as either an inert or an active ingredient in a pesticide formulation), if such use is in accordance with good agricultural practices:

(1) Use in pesticide products intended to treat seeds.

(2) Use in nursery and greenhouse operations, as defined in 40 CFR 170.3, which includes seeding, potting and transplanting activities.

(3) Pre-plant and at-transplant applications.

(4) Incorporation into seedling and planting beds.

(5) Applications to cuttings and bare roots.

(6) Applications to the field that occur after the harvested crop has been removed.

(7) Soil-directed applications around and adjacent to all plants.

(8) Applications to rangelands, which is land, mostly grasslands, whose plants can provide food (i.e., forage) for grazing or browsing animals.

(9) Use in chemigation and irrigation systems (via flood, drip, or furrow application with no overhead spray applications).

(10) Application as part of a dry fertilizer on which an active ingredient is impregnated.

(11) Aerial and ground applications that occur when no above-ground harvestable food commodities are present (usually pre-bloom).

(12) Application as part of an animal feed-through product.

(13) Applications as gel and solid (non-liquid/non-spray) crack and crevice treatments that place the gel or bait directly into or on top of the cracks and crevices via a mechanism such as a syringe.

(14) Applications to the same crop from which the food commodity is derived, whether the plant fraction(s) intended for harvest are present or not, e.g., applications of peanut meal when applied to peanut plants.

(b) Specific chemical substances. Residues resulting from the use of the following substances as either an inert or an active ingredient in a pesticide formulation are exempted from the requirement of a tolerance under FFDC section 408, if such use is in accordance with good agricultural practices and such use is included in paragraph (a):

Table with 2 columns: Chemical Substance and CAS No. listing various casein complexes and their corresponding CAS numbers.

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[FR Doc. 05-344 Filed 1-6-05; 8:45 am]

BILLING CODE 6560-50-S

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 15

[ET Docket No. 04-37 and ET Docket No. 03-104; FCC 04-245]

Broadband Power Line Systems

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document adopts new requirements and measurement guidelines for a new type of carrier current system that provides access to broadband services using electric utility companies' power lines. This new technology offers the potential for the establishment of a significant new medium for extending broadband access to American homes and businesses. Given that power lines reach virtually every residence and business in every community and geographic area in this country, Access BPL service could be made available nearly everywhere. This new broadband delivery medium could also serve to introduce additional competition to existing cable, DSL, and other broadband services. We believe these actions will promote the development of BPL systems by removing regulatory uncertainties for BPL operators and equipment manufacturers while ensuring that licensed radio services are protected from harmful interference.

DATES: Effective February 7, 2005, except for §§ 15.615(a) through (e) which contain information collection requirements that are not effective until approved by the Office of Management and Budget. The FCC will publish a document in the Federal Register announcing the effective date for those sections.

Final Paperwork Reduction Act of 1995 Analysis

This document contains modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public to comment on the information collection requirements contained in this R&O as required by the Paperwork Reduction Act of 1995, Public Law 104-13. Public and agency comments are due March 8, 2005.

ADDRESSES: Comments on the information collection requirements should be addressed to the Office of the Secretary, Federal Communications Commission, 445 12th Street, SW., Washington, DC 20554. In addition to filing comments with the Secretary, a

copy should be submitted to Leslie Smith, Federal Communications Commission, Room 1-C804, 445 12th Street, SW., Washington, DC 20554, or via Internet to [Leslie.Smith@fcc.gov](mailto:Leslie.Smith@fcc.gov), and to Kristy L. LaLonde, OMB Desk Officer, 10234 NEOB, 725 17th Street, NW., Washington, DC 20503 or via the Internet to [Kristy.L.LaLonde@omb.eop.gov](mailto:Kristy.L.LaLonde@omb.eop.gov) or via fax at (202) 395-5167.

**FOR FURTHER INFORMATION CONTACT:** Anh Wride, Office of Engineering and Technology, (202) 418-20577, e-mail: [Anh.Wride@fcc.gov](mailto:Anh.Wride@fcc.gov), TTY (202) 418-2989.

**SUPPLEMENTARY INFORMATION:** This is a summary of the Commission's *Report and Order*, ET Docket No. 04-37 and ET Docket No. 03-104, FCC 04-245, adopted October 14, 2004, and released October 28, 2004. The full text of this document is available for inspection and copying during normal business hours in the FCC Reference Center (Room CY-A257), 445 12th Street, SW., Washington, DC 20554. The complete text of this document also may be purchased from the Commission's copy contractor, Qualex International, 445 12th Street, SW., Room CY-B402, Washington, DC 20554. The full text may also be downloaded at: [www.fcc.gov](http://www.fcc.gov). Alternate formats are available to persons with disabilities by contacting Brian Millin at (202) 418-7426 or TTY (202) 418-7365.

#### **Congressional Review Act**

The Commission will send a copy of this Report & Order, in a report to be sent to Congress and the General Accounting Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

#### *Summary of Report and Order*

1. In the Report and Order, the Commission adopted new rules for Access Broadband over Power Line (Access BPL) systems, a new type of carrier current technology that provides access to high speed broadband services using electric utility companies' power lines. This new technology offers the potential for the establishment of a significant new medium for extending broadband access to American homes and businesses. Given that power lines reach virtually every residence and business in every community and geographic area in this country, Access BPL service could be made available nearly everywhere. This new broadband delivery medium could also serve to introduce additional competition to existing cable, DSL, and other broadband services. In addition, the

National Telecommunications and Information Administration (NTIA) has undertaken a significant effort to both study Access BPL technology, including its operating characteristics and interference potential, and to make specific recommendations to the Commission for policies to encourage its implementation and to manage its interference potential. Our staff has worked closely with NTIA on this matter and the policy decisions and rules we adopted reflect that cooperation and embody many of NTIA's recommendations.

2. Along with NTIA, we recognize the concerns of authorized radio service users in both the private and government sectors for the need to ensure that radio frequency (RF) energy from BPL signals on power lines does not cause harmful interference to licensed radio services. The record and our investigations indicate that BPL network systems can generally be configured and managed to minimize and/or eliminate this harmful interference potential. Our goals in developing the rules for Access BPL are to provide a framework that will both facilitate the rapid introduction and development of BPL systems and protect licensed radio services from harmful interference. Specifically, we adopted: new operational requirements for Access BPL to promote avoidance and resolution of harmful interference; new administrative requirements to aid in identifying Access BPL installations; and specific measurement guidelines and certification requirements to ensure accurate and repeatable evaluations of emissions from Access BPL and all other carrier current systems. We believe these actions will promote the development of BPL systems by removing regulatory uncertainties for BPL operators and equipment manufacturers while ensuring that licensed radio services are protected from harmful interference.

#### **Part 15—Existing Rules**

3. Carrier current systems use alternating current (AC) electric power lines to carry communications by coupling very low power RF signals onto the AC electric wiring. Traditionally, these systems have included amplitude modulated (AM) radio systems on school campuses and devices intended for the home, such as intercom systems and remote controls for electrical appliances and lamps. Carrier current systems operate on an unlicensed basis under part 15 of the Commission's rules. As a general condition of operation, part 15 devices may not cause harmful interference to

authorized radio services and must accept any interference that they receive.

4. The part 15 rules for carrier current systems currently specify radiated and conducted emission limits for devices operating below 30 MHz and above 30 MHz. Carrier current systems operating from 9 kHz to 30 MHz are subject to radiated emission limits on emissions from any part of the wiring or power network connected to the RF power source. For carrier current systems that contain their fundamental emission within the standard AM broadcast band of 535 to 1705 kHz and are intended to be received using standard AM broadcast receivers, there is no limit on conducted emissions. All other carrier current systems operating below 30 MHz are subject to a conducted emission limit only within the AM broadcast band. Carrier current devices operating above 30 MHz must meet the radiated emission limits of § 15.109(a), (b) or (g) for digital devices, which are further divided into two types. Class A equipment includes devices marketed for use in a commercial, industrial or business environment, excluding devices which are marketed for use by the general public or are intended to be used in the home. Class B equipment includes devices marketed for use in a residential environment, notwithstanding use in commercial, business and industrial environments. The rules require Access BPL systems to comply with the limits for Class A or B devices depending on whether they are marketed for use in a commercial, industrial or business environment on the one hand or for use by the general public or in the home on the other. Under this Class A/Class B regime, Access BPL systems that operate on medium voltage lines external to residential environments are considered Class A devices. Carrier current devices that do not operate on frequencies below 30 MHz are subject to the general conducted emission limits below 30 MHz. The existing part 15 rules also address power line carrier systems, which are low-speed carrier current systems operating between 10 kHz and 490 kHz, used by an electric public utility entity for protective relaying, telemetry, etc., for general supervision of the power system. Because of their specialized use and operating frequency range, power line carrier systems are not subject to specific emission limits as are general carrier current systems.

5. The Commission believes that the widespread introduction of Access BPL service would further our goals for broadband service consistent with the challenges indicated. This new

technology offers the potential to give rise to a major new medium for broadband service delivery. Services provided on Access BPL could offer high speed Internet and data communications that compete with, complement, or extend the broadband services provided on existing media. Given the ubiquitous nature of the electric power network, Access BPL could conceivably also offer these services to virtually every element of the broadband market, including residential, institutional, and commercial users. In addition, it is possible that Access BPL could provide a means to expedite the availability of broadband Internet service to consumers and business in rural and other underserved areas. We also find that encouraging the deployment of the technology in the United States will support globalization of products and services, promote continued U.S. leadership in broadband technology, and bring important benefits to the American public.

6. The Commission understand the significant concerns of licensed radio service users about the potential for Access BPL services to cause harmful interference to their operations. It is our intention to ensure that Access BPL operations do not become a source of harmful interference to licensed radio services. Based on extensive research, analyses, and practical experience, the Commission also continues to believe that the interference concerns of licensed radio users can be adequately addressed and that Access BPL systems will be able to operate successfully on an unlicensed, non-harmful interference basis under the part 15 model. In this regard, we find that the harmful interference potential from Access BPL systems operating in compliance with the existing part 15 emission limits for carrier current systems is low in connection with the additional rules we adopted. From the information provided by our field tests, the tests conducted by NTIA, theoretical predictions by NTIA and ARRL, and experience of the several tests of Access BPL systems, we observe that the potential for any harmful interference is limited to areas within a short distance of the power lines used by this technology. As emphasized by NTIA's Phase 1 study and comments, interference can be rapidly eliminated through various means should it occur. We pointed out to the individual amateurs commenting in this proceeding that the definition of "harmful interference" as used in § 15.5 of the rules is set forth in § 2.1 of the rules. We disagree with ARRL's position

that there is no reason to act now in this proceeding and that we should delay our decision on rules for Access BPL to provide more time to develop rules to prevent this technology from causing harmful interference. As indicated, the broadband service capabilities of Access BPL systems offer important opportunities for establishing a new medium for broadband access and for introducing new competition in the broadband market. We believe that it is important to set forth rules that will promote this service now, rather than delay. In addition, the record provided in response to the *Inquiry* and the *NPRM*, including the extensive studies conducted by NTIA, is more than sufficient to assure us that the rules we adopted will adequately protect licensed services from harmful interference. While some cases of harmful interference may be possible from Access BPL emissions at levels up to the part 15 limits, we agree with NTIA that the benefits of Access BPL service warrant acceptance of a small and manageable degree of interference risk.

7. As stated in the *NPRM*, we believe that, on balance, the benefits of Access BPL for bringing broadband services to the public are sufficiently important and significant so as to outweigh the limited potential for increased harmful interference that may arise. Moreover, the Commission continue to believe that cases where interference may occur or where its possible occurrence would impact critical services can be addressed through additional regulatory measures. These additional measures will generally require Access BPL operators to reduce emissions or avoid operation on certain frequencies in order to protect licensed services, to use equipment that can alter its operation by changing operating frequencies to eliminate interference, to make available information that will assist the public in identifying locations where Access BPL operations are present, and to provide notice to radio users before commencing local BPL operations. In this way, the new rules provide effective means for preventing any interference and will ensure that any instances of interference that may occur can be quickly identified and resolved. We emphasize that Access BPL systems will continue be treated as unlicensed part 15 devices and as such will be subject to the conditions that they not cause harmful interference and that they cease operation if they do cause such interference, as required by our rules. As discussed in paragraph 50, of the Report and Order, except for a few specific frequencies that are

reserved for international aeronautical safety operations, we do not believe that excluding BPL operations from frequencies used by any specific service, such as the low VHF TV bands, is necessary or appropriate. Rather, we believe requiring BPL equipment to have the capability to avoid any locally used frequency is the most effective approach to ensuring that harmful interference to licensed operations is avoided.

8. The Commission is amending its part 15 rules with changes intended to facilitate the deployment of Access BPL technology while protecting licensed users of the spectrum. Specifically, we are: defining Access BPL for purposes of our rules; maintaining the existing part 15 emission limits for carrier current systems for Access BPL; requiring that Access BPL devices employ adaptive interference mitigation techniques; requiring that Access BPL system operators provide information on the areas where their systems are installed and other technical parameters in a central data base that would be accessible by the public; and adopting specific measurement guidelines for both Access BPL and other carrier current systems to ensure that measurements are made in a consistent manner and provide for repeatable results in determining compliance with our rules.

#### *Definition of Access BPL*

9. The Commission adopted a modified version of the proposed definition of Access BPL that includes changes as suggested by the commenting parties. In this regard, we agree that the definition of Access BPL should not include the low-speed power line carrier systems used by electric utilities as defined in our rules. Transmissions on these systems have very short duty cycles that pose very low interference potential as opposed to the constant operation that characterizes Access BPL. We also agree that the definition for Access BPL should limit the low frequency cut-off to above 1.705 MHz, which is the upper frequency for the AM broadcast band. We agree that the definition for Access BPL should not include power lines located within a customer's premises or within a utility's own premises. These lines generally carry low voltage power, are not under the ownership or integral control of the power service operator, are isolated from the medium voltage lines by a distribution transformer such that a bypass device must be used to reach them with BPL signals, and pose lower potential as sources of interference because their emissions are attenuated

by the structure in which they are located. We also see no need to limit ownership or control of BPL operations to electric utility operators. We believe that an independent BPL provider can take the same steps and precautions as an electric utility operator in working with its equipment vendor, the power system, and licensed radio users to ensure that an Access BPL system does not cause harmful interference and to resolve any interference. We also see no need to specifically mention aerial or underground lines in the definition. Furthermore, we note that the record in this proceeding only addresses Access BPL systems operating over medium voltage and low voltage lines. Because the high voltage lines are located physically higher, can carry very high voltages, and have different configurations as well as characteristics with respect to potential harmful interference, we are excluding them from the definition for Access BPL at this time. Access BPL systems intended for high voltage lines can however operate under the requirements for experimental licensing in part 5 of the Commission rules.

10. We therefore are amending § 15.3 of the rules to include the following definition for Access BPL:

*Access Broadband Over Power Line (Access BPL).* A carrier current system installed and operated on an electric utility service as an unintentional radiator that sends radio frequency energy on frequencies between 1.705 MHz and 80 MHz over medium voltage lines or low voltage lines to provide broadband communications and is located on the supply side of the utility service's points of interconnection with customer premises. Access BPL does not include power line carrier systems as defined in § 15.3(t) of this part or In-House BPL systems as defined in § 15.3(gg) of this part.

11. While we are not generally addressing rules for In-House BPL systems, except for measurement procedures, we do find it useful and appropriate to set forth a definition of such systems in the rules. As NTIA and Southern point out, specifying a definition of In-House BPL systems will fully define all forms of BPL and help to clarify the differences between Access BPL and In-House systems. We find that the definition of In-House BPL suggested by NTIA properly identifies these systems. Accordingly, we adopted the following definition for In-House BPL:

*In-House Broadband Over Power Line (In-House BPL).* A carrier current system, operating as an unintentional radiator, that sends radio frequency energy to provide broadband communications on frequencies between 1.705 MHz and 80 MHz over low-

voltage electric power lines that are not owned, operated or controlled by an electric service provider. The electric power lines may be aerial (overhead), underground, or inside walls, floors or ceilings of user premises. In-House BPL devices may establish closed networks within a user's premises or provide connections to Access BPL (as defined in § 15.3(ff) of this part) networks, or both.

We also encourage industry efforts to develop standards for In-House BPL systems and devices that are complementary to and compatible with Access BPL operations.

12. *Access BPL Systems Above 80 MHz.* We agree with Corridor that Access BPL systems operating in higher regions of the spectrum, such as the Corridor Access BPL system at 5.8 GHz, should not be subject to the rules adopted herein for Access BPL systems operating in the HF and low VHF spectrum. We find that the record in this proceeding does not provide sufficient information regarding Access BPL operating in spectrum above 80 MHz, hence a decision regarding this type of Access BPL technology cannot be effectively rendered at the present time; however, Access BPL systems not covered in the above definition are subject to existing applicable part 15 rules for carrier current systems. However, we will monitor the development of Access BPL systems that operate on frequencies above 80 MHz and may consider additional requirements for Access BPL systems operating above 80 MHz in a future rulemaking if appropriate.

#### *Emission Limits*

13. *General Emission Limits.* The Commission continues to believe that it is appropriate to apply the existing part 15 radiated emission limits to Access BPL systems. We are not persuaded by the arguments of ARRL and others representing licensed spectrum users that the current emission limits are insufficient to limit the general interference potential of these systems. The 0 dB $\mu$ V/m limit suggested by the ARRL is typically below the noise floor in the HF and low VHF bands and would be unnecessarily and prohibitively restrictive for Access BPL operators. Along with NTIA, we conclude that the current emission limits will restrict Access BPL systems to very low emitted power levels in comparison to the signals of licensed radio operations. The effect of these limits will be to constrain the harmful interference potential of these systems to relatively short distances from the power lines that they occupy. In fact, in most cases the level of emissions from

Access BPL systems will be at or close to the noise floor at distances beyond a hundred meters of an installed power line. We recognize that some radio operations in the bands being used for Access BPL, such as those of Amateur radio licensees, may occur at distances sufficiently close to power lines as to make harmful interference a possibility. We believe that those situations can be addressed through interference avoidance techniques by the Access BPL provider such as frequency band selection, notching, or judicious device placement; the rules we are specifying facilitate such solutions. We do not see evidence that BPL operation will significantly contribute RF energy to generally raise the background noise level. In addition, because power lines inherently can radiate significant noise emissions as noted by NTIA and ARRL, good engineering practice is to locate sensitive receiver antennas as far as practicable from power lines. This practice will also help prevent interference from Access BPL emissions. In fact, as stated by NTIA, power line noise emissions at frequencies up to 800 MHz may actually be reduced as Access BPL systems are deployed. Furthermore, we see no need to impose a strict band-pass filtering on Access BPL, and we deny Echelon's request in this regard.

14. Although we agree with ARRL that Access BPL on overhead lines is not a traditional point-source emitter, we do not believe that Access BPL devices will cause the power lines to act as countless miles of transmission lines all radiating RF energy along their full length. First, the part 15 emission limits for carrier current systems have proven very effective at controlling interference from such systems. Also, for the reasons indicated by PPL Telcom, we believe that the design and configuration of Access BPL systems will be inconsistent with the development of cumulative emissions effects for nearby receivers. Moreover, the NTIA Phase 1 Study and our own field measurements of Access BPL installations indicate that these systems are not efficient radiators, nor are their emissions cumulative such that they permeate areas in which they are located. Rather, we find that emissions from Access BPL systems tend to dissipate after a short distance from a coupler along a line, and then remain relatively the same for some distance. Along the line there also may be multiple points where emissions may be relatively higher but within the part 15 limits. However, because the signal level decreases significantly with distance perpendicular from the line, the potential for interference also decays

rapidly with distance from the line. To ensure that the effects of the power line as a radiator are taken into consideration when testing for compliance with our part 15 rules, the measurement procedures we adopted for Access BPL systems, as discussed in the Report and Order, specify that emission measurements are to be made at several specific distances from the Access BPL equipment source, and that measurements are to be taken parallel to the power line to find the maximum emissions from the BPL system.

15. Notwithstanding our decision on emission limits, we do recognize that Access BPL systems present concerns for licensed users in the HF and low VHF bands, given the propagation characteristics of RF signals in the range of frequencies being used for these systems, the diversity of users of these frequencies, and the fact that Access BPL devices will be installed at many locations in an area. While we conclude, that the likelihood that interference from Access BPL operations will occur is low at the signal levels allowed under the current part 15 emission limits, such interference could occur in limited situations despite the intentions of BPL operators. Moreover, even if interference were to occur to amateur operations at the distances indicated by the ARRL, as recommended by NTIA, there are additional interference mitigation techniques that we are requiring of BPL providers to address such interference potential. We believe that such steps should be taken, particularly in those cases where the occurrence of interference would affect critical services or where interference could be anticipated to occur.

16. We find no need to subject Access BPL equipment to a conducted emission limit that would apply for compliance measurement purposes before the equipment is shipped and installed. We note that Access BPL manufacturers already test their equipment for the proper power levels in a laboratory as part of their manufacturing procedures, and in any case, the radiated emissions from a representative model of equipment would be measured *in-situ* at three sites as part of the equipment authorization process. We therefore find that requiring conducted emission tests in the laboratory would be a redundant and unnecessary procedure.

17. The Class A limits are appropriate because Access BPL devices are not marketed to the general public and operate on the medium voltage power lines as commercial facilities. Those portions of Access BPL systems that operate above 30 MHz on the low-voltage power lines from the

distribution transformer to a residence and all in-house wiring connected to a BPL device are subject to Class B radiated emission limits. The Class B limits are appropriate for these operations because they are located within residential environments and are marketed for use by the general public. Although Access BPL systems are required to comply with the less stringent Class A limits, operators will nonetheless have a strong incentive to exercise the utmost caution in installing and operating their systems to avoid harmful interference and ensure uninterrupted service to their customers, given that there is significant investment in the deployment of the service. We do not find that a 10 dB increase in the allowable emissions levels is warranted or desirable for systems that can reduce emissions by 40 dB in selected bands, as suggested by Satus. We believe that it is important that Access BPL systems comply with the emission limits across their entire operating range in order to minimize the potential for interference in all bands, not just those where interference may be more likely at a particular location.

18. *Other Protection Measures.* We agree with NTIA and the parties representing public safety agencies that critical Federal Government and other services specified by NTIA and public safety warrant additional protection. These services, including national defense, maritime distress and safety, aeronautical navigation and communications, emergency response, radioastronomy, and others provide important safety and research services whose functions would be afforded additional protection against possible interference from Access BPL operations. We agree with and adopted NTIA's approach for addressing additional protection to critical Federal Government and other radio operations. The excluded frequency bands amount only to a total of 1731 kHz, or 2% of the spectrum within the 1.7–80 MHz band. The exclusion zones are relatively few, on only the 2173.5 to 2190.5 kHz global maritime distress signaling band with prohibited distances of 1 km from coast station facilities, and 73.0–74.6 MHz band used by the ten Very Long Baseline Array facilities of radio astronomy observatories with prohibited distances of 29 km and 11 km for Access BPL systems using overhead medium voltage power lines and other Access BPL implementations, respectively. We agree with NTIA that the potential for interference from Access BPL to the critical services in exclusion zones is somewhat greater for transmissions

carried on overhead medium voltage lines than other Access BPL implementations, *i.e.*, transmissions carried on underground lines or low voltage lines. In this regard, emissions from underground power lines are generally attenuated by the earth materials in which they are buried, while emissions from low voltage lines are generally lower because such lines are generally used only for short feeder links from a transformer to a customer service location and these lines are more closely spaced with an accompanying neutral line—and in fact are often twisted together with the neutral line. The close spacing—together with the shorter length—reduces radiated RF emissions relative to those from overhead medium voltage lines. In addition, the requirement to contact and work with the Federal Government in the 53 consultation areas is not generally expected to result in major impact on Access BPL operators' flexibility to use specific frequency bands. We therefore find that avoiding operation on the frequencies excluded under these restrictions and requirements will not be burdensome for Access BPL operators and manufacturers in order to protect distress and safety communications. Indeed, several manufacturers and Access BPL operators have indicated that they are capable of, and already do, notch out certain frequency bands. We disagree with Ameren, PLCA, and Southern that the mandatory consultation provisions imposed on Access BPL operators impose burdens on Access BPL operators not borne by other unlicensed broadband operators without countervailing benefits. For example, in part 76, we require that cable operators conduct measurements annually to ensure that signal leakage does not create interference risks. Moreover, the distributive nature and other technical characteristics of Access BPL pose somewhat higher potential for interference than point-source wireless broadband systems that warrant additional protective measures. In addition, the consultation actions will benefit Access BPL operators by leading them to select frequencies at the beginning of their service so as to avoid interference to critical services that might have to be corrected later. Accordingly, we adopted NTIA's list of consultation areas, excluded bands, and exclusion zones to which Access BPL equipment must adhere. For all other radio communication operations not addressed in these special provisions, radio operators have the opportunity to inform local BPL operators of the

pertinent details of their operations and BPL operators have the opportunity to apply that information as appropriate to prevent interference.

19. With regard to the consultation areas, we will require Access BPL operators to provide notification to the parties listed as Federal Government contact points, as designated in the rules, for the area in which their systems will operate at least 30 days prior to initiation of service. The notification shall include: the name of the Access BPL provider; the frequencies of the Access BPL operation; the postal zip codes served by the Access BPL operation; the manufacturer of and type of Access BPL equipment being deployed (*i.e.*, FCC ID); point of contact information (both telephone and e-mail address); and the proposed or actual date of initiation of Access BPL operation. We will also require that systems located in consultation areas that were in operation prior to the effective date of these rules provide this notice to the appropriate contact point within 45 days of that date. NTIA has indicated that it plans to arrange to have information made available to BPL operators on Federal Government operations. We expect parties to consult in good faith to ensure that no harmful interference is caused to licensed operations and that any constraints on BPL deployments are minimized to those necessary to avoid harmful interference.

20. As indicated in the *NPRM*, we believe that the risk of harmful interference to State and local public safety services, *i.e.*, EMS, fire, law enforcement, and emergency management agencies from Access BPL operations is essentially low. In general, we believe that a properly designed and operated Access BPL system will pose little interference hazard to services such as aeronautical, maritime and public safety that are designed to operate with relatively high signal-to-noise ratios. In analyzing the potential for harmful interference to public safety systems, we took into account the fact that low-level part 15 signals from Access BPL devices attenuate rapidly as the distance from the power line increases; and that most public safety systems are designed so that mobile and portable units receive a signal level significantly above the noise floor. From an interference analysis standpoint, this latter characteristic distinguishes public safety systems from amateur radio stations using high-sensitivity receivers to receive signals from transmitters often thousands of miles away. However, it is foreseeable that under

certain rare circumstances a public safety unit could: (a) Operate in close proximity to a power line carrying Access BPL transmissions at a location where field strength is near the part 15 limit; (b) be tuned to a frequency radiated by an Access BPL device; and (c) be receiving a weak signal from a distant, or obstructed, public safety base station. In general, potential harmful interference under these conditions would be limited to public safety units operating on systems using low-band VHF channels (25–50 MHz). We therefore conclude that the interference protections set forth will be adequate to foreclose harmful interference to public safety systems except perhaps under such unusual circumstances.

21. However, we also conclude that public safety systems merit additional protection because of the often critical and/or safety-of-life nature of the communications they provide. Given the importance and nature of public safety communications, we believe it is necessary to require Access BPL systems to notify the public safety agencies in their local areas, *i.e.*, State and local police, fire, emergency medical, any special emergency coordinators, call box operators, and other entities that are eligible for public safety licenses under § 90.20 of the rules. This advance notification will provide public safety operators with an opportunity to assess whether there are portions of its geographic area of responsibility about which it should make special arrangements with the Access BPL operator in order to avoid interference. Consistent with our decision on notifications for Federal Government consultation areas, we will require that this notification be provided to local public safety agencies at least 30 days prior to a system's initial operation, the activation of any major extensions of the system, or any changes in its operating characteristics, *i.e.*, transmitting frequencies. The notification shall include: (1) The name of the Access BPL provider, (2) the frequencies of the Access BPL operation, (3) the postal zip codes served by the Access BPL operation, (4) the manufacturer of and type of Access BPL equipment being deployed (*i.e.*, FCC ID), (5) point of contact information (both telephone and e-mail address), and (6) the proposed or actual date of initiation of Access BPL operation. We will also require that systems in operation prior to the effective date of these rules provide this notice to local public safety agencies within 45 days of that date.

22. We do not see a need to establish Access BPL-free zones around airports, military bases, hospitals, police stations

and fire stations, as requested by NAC/Amherst. To the extent that these services warrant special protection, they will be afforded protection through the excluded bands, exclusion zones and consultation areas specified by NTIA. We similarly do not find that amateur radio frequencies warrant the special protection afforded frequencies reserved for international aeronautical and maritime safety operations. We note that in many instances amateur frequencies are used for routine communications and hobby activities. While we recognize that amateurs may on occasion assist in providing emergency communications, we believe that the general part 15 provisions and the specific provisions being adopted for Access BPL operations are sufficient to protect these amateur operations.

#### *Interference Mitigation*

23. We continue to believe that it is important that Access BPL systems include capabilities that allow them to modify their operations to mitigate or avoid instances of harmful interference that may arise. These capabilities will allow Access BPL system operators to resolve interference found to occur at specific locations or in specific areas of their plant in an expeditious manner and without disrupting service to their broadband service subscribers. We agree with NTIA that Access BPL operators would have strong incentives to voluntarily implement such equipment and operating practices. We also agree with NTIA that, notwithstanding these incentives, it is necessary that we adopt requirements for interference mitigation capabilities to ensure that any interference can be resolved quickly without the need to address the tension that might arise over the possible disruption of service to BPL subscribers if mitigation capabilities were not available. The concerns of those commenting parties who argue that the mitigation requirements would not be sufficient to protect their operations are misplaced. That protection will be provided by: (1) The emissions limits for Access BPL systems; (2) the provisions for consultation areas, excluded bands, and exclusion zones; and (3) the requirement that Access BPL systems not cause interference, as set forth above. The mitigation requirements are intended to ensure that Access BPL systems are designed with features that support interference mitigation, both during initial installation, if sensitive local communications systems are identified in advance, and after installation, when the newly required operational

capabilities will allow Access BPL system operators to expeditiously resolve any instances of interference that may occur, without the need to cease operations and thereby disrupt the broadband data services they provide to their subscribers.

24. Accordingly, we have adopted requirements that Access BPL systems incorporate capabilities to modify their systems' operations and performance to mitigate or avoid potential harmful interference to radio services and to deactivate specific units found to actually cause harmful interference that cannot be remedied through modification of their operations as proposed, but with certain modifications. Our approach in specifying these requirements is to provide Access BPL equipment manufacturers and operators with flexibility to design and implement a broad range of products and system designs to meet particular service and operational needs while ensuring that systems have the capabilities to make operational changes to avoid any interference that may arise. The specific provisions of the mitigation requirements and the comments that concern them are addressed below. We also see no basis for subjecting Access BPL systems to requirements for addressing interference complaints that are different and more stringent than our procedures for addressing interference from other types of unlicensed devices. In this regard, we will continue to subject Access BPL systems to the procedures of § 15.5(c) of the rules. Under this rule, parties who believe they are experiencing interference from an unlicensed device are first expected to bring the matter to the attention of the operator of the unlicensed device. If that action does not resolve the interference, the party may then seek intervention by the Commission.

25. To be more specific, in the event a BPL interference complaint is filed by a licensee with the Commission, the Commission will contact the complainant and/or the BPL provider to determine if they have first attempted to resolve the interference complaint among themselves. If they have not made such an attempt, the complaint will be forwarded to the BPL provider for action and the complainant notified that they will be contacted by the BPL provider concerning their interference complaint. The Commission may periodically monitor the resolution process to ensure that the parties are working in good faith and making appropriate progress in resolving the interference complaint. If the parties

have attempted to address the complaint but the matter remains unresolved, the Commission, through its Enforcement Bureau with assistance from the Office of Engineering and Technology will review the complaint and take appropriate action. In general, the Commission will contact the BPL operator and request information on what steps they have taken to address the licensee's complaint. If these actions are deemed insufficient to resolve the interference complaint, the Commission will instruct the BPL operator to take immediate remedial actions, such as "notching" or avoiding specific frequencies, or ceasing operations. In specific instances, the Commission may undertake field testing and measurements to address interference complaints and determine the most appropriate remedial action.

26. *Frequency Avoidance.* We conclude that the most appropriate approach regarding mitigation techniques that involve altering system operation is to require that Access BPL systems incorporate the capability to avoid the use of specific frequency bands. The ability to alter a system's operation to notch-out transmissions from specific frequencies where interference is occurring is a necessary feature for resolving interference without disrupting service to BPL subscribers. While other mitigation capabilities, such as adaptive or commanded power control, are desirable system features that can serve to reduce interference potential, they generally would provide a much lower degree of benefit in eliminating interference than frequency avoidance. Limiting the requirement for operational modification capabilities to frequency avoidance is also consistent with our intent to minimize the impact of these requirements on manufacturers and system operators so as to preserve their flexibility to design products and systems that will best meet the needs of Access BPL subscribers.

27. In considering specifications for the notching requirement, we find that the most important consideration is to ensure that the notch provides enough filtering to effectively reduce the potential for interference. Our experience in examining the field performance of various Access BPL operations indicates that at frequencies below 30 MHz, a notching capability that provides at least a 20 dB reduction of Access BPL emissions below the current applicable part 15 emission limits is adequate to resolve interference occurrences that might result to mobile reception from such operations. In this regard, we will generally assume that a

20 dB notch is sufficient to resolve any harmful interference that might occur to mobile operations, given the low signal levels allowed under the part 15 emission limits and the fact that a mobile transceiver can readily be repositioned to provide some separation from the Access BPL operation. The interference potential from emissions at this low level would be limited to a very short range from an Access BPL device or a power line on which Access BPL transmissions are carried. We also believe that notching at this level with some distance separation will generally avoid interference to fixed operations, including those that use more sensitive receivers. Above 30 MHz we believe that a notching capability of at least 10 dB is sufficient to provide the same level of protection, given the more stringent part 15 emission limits that apply to Access BPL transmissions above 30 MHz and the increased attenuation of emissions that occurs from propagation losses as the frequency of operation increases. With regard to NAS/CORF's requests for protection of radioastronomy, we note that special protections are provided for radioastronomy in the exclusion zones and consultation requirements for Access BPL.

28. We do not believe it is necessary to specify the bandwidth over which the notching capability must function. Rather, we will adopt the more general requirement that Access BPL systems must be capable of avoiding transmissions in any frequency band or bands in order to eliminate any instances of interference with the operations of licensed radio services. We therefore are amending our rules to require that Access BPL devices have the capability to reduce emissions by at least 20 dB below the part 15 emission limits in frequency bands below 30 MHz and 10 dB below those limits in frequency bands 30 MHz and above. We believe that these provisions adequately set forth the structure of the required capabilities for modifying the operation of an Access BPL system. We are not specifying requirements for use of the frequency avoidance capabilities. Rather, we believe that system operators should have the discretion to use this capability or any other alternative available to them as they might deem appropriate to resolve specific situations involving interference that they may encounter in the course of their operations.

29. We do not find any justification for a requirement that Access BPL operators notch the frequencies of any or all of those services that use frequencies in the HF and low VHF

bands. We believe that the emission limits, consultation areas, excluded bands, exclusion zones, and the requirement that Access BPL systems not cause interference, are generally sufficient to control the interference potential of these systems. The required notching capability will enable a system operator to address any specific instances of interference that might otherwise arise. We also decline to adopt a rule requiring transmission of identification codes. As NTIA states, such codes could increase the potential for interference from Access BPL operations. We also do not believe that it would be practicable for ARINC or any other operator to identify an Access BPL system as the source of interference and contact its operator on a real time basis to resolve the interference. As NTIA indicates in its letter of September 24, 2004, no practical method has been identified for Access BPL systems to transmit an identifying code. We believe that the Access BPL notification requirements will provide sufficient information to locate and mitigate interference.

30. *Shut Down Requirement.* We continue to believe that Access BPL equipment and systems should have the capability to deactivate individual system components. This feature will allow systems to deactivate limited portions of their plant so that localized interference problems can be addressed without affecting service to all of their subscribers. As a secondary benefit, the shut-down feature will allow system operators to rapidly diagnose whether their operations are causing reported interference. We are also requiring that the shut-down feature in individual devices be remote-controllable from the central system operations facility or other appropriate location. This will allow rapid response to resolve interference in any emergency or other urgent situation that might arise. We also agree with Progress Energy the required shut-down capability should be manually controlled. Moreover, we have no record on which to base a decision on the conditions under which an automated capability would be activated. We also recognize that, depending on how it would be triggered, an automated shut-down capability could unnecessarily have detrimental effects on a power utility service's operations in addition to disrupting broadband service to its Access BPL customers.

31. It is not our intention that a service shut-down be the first step in a system operator's response to a valid interference complaint. As suggested by several of the commenting parties, we

would anticipate that shut-down would be a last resort when all other efforts to satisfactorily reduce interference have failed. We disagree with Ameren that the shut-down requirement will add unnecessary costs and complexity to Access BPL equipment. As NTIA and our own field testing indicate, most Access BPL systems and equipment already include the capability to shut down specific components of their operation. Accordingly, we are requiring that Access BPL systems incorporate features that will allow the deactivation of individual components on a remote-controlled basis, to be implemented. We reiterate, however, that the Commission, through a duly authorized representative, is the sole authority that may direct an Access BPL operator to cease operating any of its devices to eliminate interference.

#### *Access BPL Notification and Database Requirements*

32. We believe that the Access BPL notification and database requirements proposed in the *NPRM* are appropriate and sufficient to ensure that any potential interference to licensed services from BPL operations can be adequately identified and quickly addressed. The primary intent of our notification and database requirements is to ensure that licensed users of the spectrum have a publicly accessible and centralized source of information on BPL operations to determine whether there may be Access BPL operations on particular frequencies within their local area so that any incident of harmful interference can be resolved should it occur. The information contained in the notification database need only be sufficient to determine whether there may be a BPL operation in the local area, the nature of the BPL operations, whether the BPL system is operating on frequencies that could potentially be a source of harmful interference to the licensed user and to identify an appropriate contact person who can work directly with the complainant to resolve the harmful interference if it is determined to be caused by the local BPL operations. Additional or more detailed relevant information needed by a radio operator could be requested via the contact person indicated in the database, as appropriate.

33. We therefore are adopting rules that will require the BPL industry to establish within July 6, 2005, a centralized publicly accessible Access BPL notification database. We note that two organizations have indicated their willingness to perform this task and that the issue of "independence" of the database manager has been raised by

some of the commenting parties. The responsibilities and duties of the database manager are to maintain complete, accurate and timely records of FCC-mandated information. We are not requiring, as some parties have suggested, that the database manager be involved in, monitor, or manage the interference resolution process. The party responsible for avoiding interference is clearly the Access BPL operator and his responsibilities are clearly set forth in the existing procedures under § 15.5(c) of the Commission rules. We therefore do not find that the database manager need be an "independent" third-party with no relationship to the BPL or utility industry and are not adopting such a requirement.

34. With regard to the information to be included in the database, we adopted rules that will require the Access BPL operator to provide the BPL industry designated database manager with the following information 30 days prior to initiation of any operation or service: (1) The name of the Access BPL provider; (2) the frequencies of the Access BPL operation; (3) the postal zip codes served by the specific Access BPL operation; (4) the manufacturer and type of Access BPL equipment being deployed (*i.e.*, FCC ID); (5) point of contact information (both telephone and e-mail address) for interference inquiries and resolution; and (6) the proposed/or actual date of Access BPL operation. The database manager shall be required to enter this information into the publicly accessible database within 3 business days of receipt. This will allow some period of time for the database manager and BPL provider to address any questions with regard to information submitted and to ensure that information entered into the database is correct. We believe that the above information provides sufficient specificity for identifying potential interference while at the same time avoiding valid concerns that sensitive information on critical infrastructure not be revealed.

35. We believe that using zip codes, as suggested by Southern, would sufficiently identify the area of Access BPL deployment without revealing specific sensitive information and would facilitate a more organized approach to identification and resolution of harmful interference. We note that zip codes are easily understood and can be identified by both licensees and BPL operators. With regard to those parties that request more comprehensive information, we do not find that benefits of providing such information in the database would



outweigh the substantial cost of collecting and reporting this additional information. We note, for example, that NTIA's proposals to require information on modulation types, number of carriers, range of transmission duty cycle, minimum and maximum carrier spacing, symbol rates per carrier, etc., would provide little additional guidance on whether interference were being caused in a particular instance as compared to the more simple requirement of identifying BPL operating frequencies. In addition, we are requiring that BPL equipment must be certified and therefore more detailed technical information will be available through our equipment authorization files for those parties desiring such information. We also are not requiring Access BPL operators to have multi-lingual contact persons. We believe that requiring both telephone and e-mail contact information is sufficient to address interference inquiries. We are also not requiring that telephone contact positions be staffed 24 hours per day and seven days a week. We believe that our emission requirements and other mitigation rules will ensure that interference is generally avoided. We believe that telephone contact staffing during normal business hours is sufficient and also note that e-mail would generally allow interference reports to be filed at any time.

36. We expect the Access BPL operators and licensees to cooperate in good faith to identify and resolve instances of harmful interference. We require the notification database for Access BPL operators to notify the operation of its devices and systems to facilitate the speedy resolution of interference. Speedy resolution of interference will not result if the database information on Access BPL deployments is abused and the BPL operators are deluged with frivolous interference complaints. We expect the Access BPL operators to take every complaint of interference seriously and to diagnose the possible cause of interference quickly. At the same time, we expect the complainant to have first taken reasonable steps to confirm that interference rather than a receiver system malfunction is occurring and, to the extent practicable, to determine that the interference source is located outside the complainant's premises. We expect both parties to cooperate to determine a mutually acceptable schedule to diagnose and resolve the interference complaint, recognizing that the Access BPL operator may have to prioritize any complaints of interference that it receives (e.g., from a public safety

agency). With regard to public safety operations, however, we will require that the BPL operator respond to complaints of harmful interference from public safety users within 24 hours; the BPL provider shall be required to immediately cease the operations causing the public safety complaint if it fails to respond to such complaint within 24 hours. Any complaints of interference that are not resolved in accordance with the mutually agreed schedule may be filed with the Commission along with the particulars of the interference case. Upon receipt of the interference complaint, the Commission will investigate the complaint and take action against the Access BPL operator if it is found to be causing harmful interference. If, on the other hand the Commission uses its resources to investigate an interference complaint that is found to be frivolous, the Commission will impose appropriate sanctions for abuse of its administrative process.

#### Measurement Guidelines

##### *Access BPL Systems*

37. We find the extensive measurement and modeling efforts presented in the NTIA Phase 1 Study and the Technical Appendix to NTIA's comments to be highly useful in our efforts to develop appropriate measurement procedures for Access BPL. The scientific engineering in those submissions clarifies the interference potential of Access BPL on radio reception and the recommended techniques for measurement of Access BPL emissions provide us with a well thought-out plan on which to base our decisions on measurement issues. Our decision, takes into account NTIA's research and adopts a modified version of its recommendations.

38. We find that our proposed measurement procedure for testing Access BPL systems including the presence and testing of all of their electronic components to be reasonable as each component is part of the Access system of that installation. We do not agree with Southern that the testing should be limited to three representative signal injection points. Southern believes that the highest levels of emissions on overhead systems are found at the signal injection point, and it states that the biggest variable affecting emissions is impedance mismatch between the signal injection system and the power system at the point of injection, which could be a coupler or a repeater. We agree with Southern that each injection point affects the radiated emissions. However,

Southern's suggestion of selecting only representative signal injection points precludes the presence of other components, e.g., booster, concentrator, extractor, etc. if they should be together at an installation to make up the complete Access BPL system. Our requirement for a typical installation takes into account the topology of the power lines and of all Access BPL devices at that installation, thus choosing only representative injection points, as Southern recommends, does not cover the installation as a whole. Accordingly, we will keep our proposed *in-situ* requirements for including and testing all components of an Access BPL system. We also find that our measurement procedure for testing Access BPL systems *in-situ* at three typical underground locations along a number of radials consistent with testing other part 15 carrier current devices. The selection of three typical underground installations is a streamlined procedure, compared to testing each and every installation, as recommended by some parties; therefore we do not agree with Main.Net that only one underground location should be tested. We discuss below the issues with respect to measuring radiated emissions from Access BPL systems on overhead power lines.

39. *Measurement Distance.* Despite the stated aversion of NTIA and ARRL to distance extrapolation, we recognize that at many *in-situ* test locations, it may not be possible or practicable to measure at the proposed fixed distances of 10 and 3 meters. If a 10-meter distance places the measurement antenna on a roadway, safety may dictate increasing the distance to, e.g., 14 meters in order to position the testers out of harm's way. Hence, we expect that distance extrapolation will be necessary for *in-situ* testing. We note that NTIA's latest computer modeling results show that the variation of field strength with distance is consistent with the existing part 15 distance extrapolation when used with the slant range distance to the power line as was proposed in Appendix C of the *NPRM*. We also note that although the ARRL and ARINC recommend the use of a 20 dB per decade extrapolation factor rather than the existing 40 dB per decade in part 15 for frequencies below 30 MHz, Ameren states that it has determined the characteristics of the fields near the line support the case for assuming a 40 dB per decade decay rate of the field away from the line and recommends the use of the existing 40 dB per decade extrapolation factor. Given the lack of conclusive

experimental data pending large scale Access BPL deployments, we will continue the use of the existing part 15 distance extrapolation factors in our rules, but with the slant range rather than horizontal distance. If new information becomes available that alternative emission limit/distance standards or extrapolation factors would be more appropriate, we will revisit this issue at another time.

40. *Receive Antenna Height and Correction Factor.* NTIA expresses a possible need for “adjustments” to measured data due to three factors: (1) Effect of antenna height, (2) effect of distance (extrapolation methods), and (3) effect of using an H-field sensing antenna to predict E-fields in the near-field region. However, NTIA initially provided a specific recommendation regarding only one of these issues—correction for the effect of antenna height. Our modeling suggests that there is a linkage between these factors. We believe that all three areas must be considered together in order to develop appropriate measurement procedures. Furthermore, NTIA’s recommendation for a 5 dB correction factor is based on a constant measurement antenna height of 1 meter. On the other hand, for frequencies above 30 MHz, our current measurement guidelines require varying the receive antenna height from 1 to 4 meters, hence higher peaks at a higher antenna height would be found with our test procedure, obviating the need for a height correction factor at those frequencies. However, we recognize that NTIA’s method of keeping the antenna height constant and applying a height correction factor is aimed at simplifying the measurement procedure; hence, this might be an alternative testing procedure that BPL providers may actually prefer. The Commission’s rules have historically allowed the use of alternative methods for compliance measurements, based on good engineering practices. In deference to NTIA’s extensive work culminating in the NTIA recommendations in this proceeding, we will adopt NTIA’s recommendations for antenna height and correction factor as an alternative method within the measurement guidelines of Appendix C of the Report and Order. We note however that the methods are mutually exclusive, *i.e.*, the BPL tester must choose either the NTIA alternative method or the FCC method, and cannot mix and match the two.

41. *Type of Antenna Used for Testing.* Given NTIA’s concurrence with the use of a magnetic loop antenna for emission measurements below 30 MHz and electric field sensing antennas above 30 MHz, we are adopting our proposal to

use these antenna types in Access BPL emission measurements. This decision is consistent with the use of such antennas for testing other types of part 15 devices.

42. *Effects of Power Lines on the Radiated Emissions of a BPL Device.* We are concerned that NTIA’s recommendation for performing field strength measurements all along a 1200-meter section of the connected power line wiring would be difficult and burdensome for Access BPL system operation. In this regard, we note that such a process could be time-consuming and would require many individual measurements, when power wiring may be many miles long, and the interval between measurements may have to be a small fraction of a wavelength in order to ensure that the true peak is captured. It is clear from the modeling results presented by NTIA that the maximum emission from the system often occurs further down-line from the coupler than the one-wavelength maximum distance proposed in Appendix C of the *NPRM*. However, it is also clear from the NTIA data that the true maximum is not significantly larger than the maximum that would be found over the limited search space that we proposed. We understand the concerns of Ameren, Southern, and other BPL providers regarding an overly large number of necessary measurements, which could increase the costs of compliance testing. We therefore believe that the approach in our proposed measurement guidelines strikes an appropriate balance in avoiding a potentially very large number of measurements by allowing the use of the mid-band frequency in determining measurement distances down-line for a given frequency band of operation. We also note that, at each of the five specified down-line points, measurements must be made at all operating frequencies of the Access BPL device, in order to find the peaks.

43. We concur with NTIA’s recommendation that measurements be made sequentially with the Access BPL devices operating at all frequencies at which they are capable. This is consistent with existing part 15 requirements, and with our proposed measurement guidelines. It is important that radiated emissions be measured at all operating frequencies to find the peaks. We also concur with NTIA’s recommendation that measurements be made using the maximum possible BPL device output power and operational duty factor. We disagree with Progress Energy that emission measurements should be performed with the Access BPL equipment power levels set for

normal operations at that site, and not at the maximum levels. Testing at the BPL maximum output power and operational duty factor is necessary to ensure identification of the maximum field strength that the device is capable of generating. The measurement report and operating instructions must clearly state the maximum output power and duty factor settings necessary to certify that the installed device will comply with our limits. However, because the same device might be used on either overhead or underground power lines having different radiating properties, we are not requiring that the device be modified to prevent operation at higher power levels and duty cycle settings. Furthermore, Access BPL devices must comply with our limits upon power-up following a fault condition, or during a start-up operation after a shut-off procedure, by the use of a non-volatile memory, or some other method, to immediately restore previous settings with programmed notches and excluded bands. This is necessary to avoid the situation where programmed protection schemes, such as excluded bands and notches, have to be restored manually, thus leaving protected licensed services vulnerable during the time delay caused by a manual re-programming procedure.

44. Based on the foregoing, we believe that our proposed measurement guidelines that require selection of fractional wavelengths based on mid-band frequency for down-line measurements strike an appropriate balance between the need to ensure compliance with the rules and practical considerations of the burden and degree of measurement difficulty placed on system operators, and that our requirements for testing at maximum output power and operational duty factor and requirement for clear identification of maximum compliant operating levels will ensure that devices comply under all conditions. Accordingly, we are adopting the measurement guidelines in Appendix C of the *NPRM*, modified to incorporate some of NTIA’s recommendations, as discussed in the Report and Order.

45. *Selection of Representative Installations.* Although we concur with NTIA that the selection of typical Access BPL installations for *in-situ* measurements must be made in a careful manner, taking into account the various configurations of the power lines to select a typical, representative installation, we will not require specific criteria for site selection process, because this may limit the number of test sites which may actually be more typical in a specific provider’s service area than those recommended by NTIA.

We find that our proposed guidelines for three typical overhead installations and three typical underground installations are reasonable to cover a number of test sites in deployment. We also find that by requiring Access BPL devices to be certified by the equipment manufacturer, the concerns of Progress Energy regarding Access BPL installation sites with multiple vendors' equipment no longer exist because the responsibility for site selection to test for equipment certification purposes rests with the Access BPL manufacturer and not with the utility. We are however recommending that the utility operator verify that each representative Access BPL site complies following the installation of a separately certified Access BPL equipment. In such cases, the selection of the test site should be based on the characteristics of the installation and not on vendor's equipment types. Additionally, we concur with Southern and UPLC that NTIA's recommendation in the NTIA Phase 1 Study of requiring a representative power line of 600 meters devoid of discontinuities is impractical, because of the difficulty of finding such a line. Accordingly, in the absence of more specific input, we will not require the selection of such a specific type of power line.

46. *Other requirements.* We find that NTIA's recommendations regarding the various reporting requirements for the test report are satisfied by our adoption of the certification procedure for Access BPL equipment authorization. Information regarding the test conditions, spectrum distribution and other relevant technical specifications will be required in the certification report for the equipment, which will be accessible through our equipment authorization database. We further find that NTIA's recommendation to embody requirements such as measurement distance, measurement bandwidth, etc. directly into the rules and not merely as guidelines, would not be consistent with our current practice of including measurement specifications in a separate guideline.

#### *In-House Carrier Current Systems*

47. We note that although CISPR is continuing to work on addressing emission issues that will apply to In-House BPL, no final recommendation has been adopted. We also note that most commenters in this proceeding address Access BPL, and not In-House BPL, issues. Measurements along the service wire leading to the house have been proposed because this wire can be one of the conduits for radiation coming from In-House BPL devices. We are

sympathetic to HomePlug's concerns, however. To address HomePlug's concerns, we will allow measurements to be made at three different points along the wire, where the highest radiated emissions are found; these points would not need to be associated with specific wavelengths of the device's operating frequencies, if the installation under test does not include a service wire with a sufficient length for the required measurements. Moreover, testing is required on only one side of the service wire because radiation is nearly symmetrical on either side of the wire. The test report must provide documentation explaining the test configuration. As for the required clear space along the service wire, the guidelines do allow the test to be performed at 3 meters with a distance extrapolation factor when a 10-meter clearance is not available, hence we would expect that most residence configurations would not pose any clearance problem. Accordingly, we partially grant HomePlug's request and hereby adopt the guidelines for In-House BPL and all other in-house types of carrier current systems in Appendix C of this Report and Order.

#### *Equipment Authorization*

48. Upon careful consideration of the record, we find that Access BPL systems are not typical unintentional radiators, and that emission measurements for such systems *in-situ* are critical in determining their interference potential. We are persuaded by NTIA that the newness of the Access BPL measurement procedures warrants review of measurement reports. We therefore conclude that the Certification procedure is appropriate for this new technology to allow us to maintain oversight until additional operational experience is obtained from its wide deployment. While we appreciate NTIA's concerns for assigning responsibility with respect to Access BPL compliance, we do not find that the operator, rather than the Access BPL equipment manufacturer, should bear the burden of the certification requirement. Since a system operator does not control the manufacture of the equipment, it will not be in a position to control production to ensure that each unit marketed conforms to the unit tested for compliance. We believe that the legal and business relationship between the system operator and the BPL manufacturer will be sufficient to ensure that Access BPL equipment installed on a power line be in compliance with our rules. We do, however, strongly recommend that operators perform initial installation

and subsequent periodic testing on their systems in order to ensure that the systems maintain compliance with our emission limits.

49. Based on the foregoing, we are subjecting Access BPL to the certification procedure to be carried out by the equipment manufacturer. We are also clarifying that we are retaining the verification procedure for all carrier current systems other than Access BPL, because the verification procedure has been adequate to ensure that other types of carrier current systems comply with the part 15 rules.

50. We also specify that Access BPL certification will be initially performed by the Commission. In General Docket No. 98-68, we established the requirements for Telecommunication Certification Bodies (TCBs) that are allowed to approve equipment in the same manner as the Commission. In that proceeding, we stated that while we intended to use TCBs to certify a broad range of equipment, we found that certain functions should continue to be performed by the Commission. The functions included certifying new or unique equipment for which the rules or requirements do not exist or for which the application of the rules is not clear. Because Access BPL is a new technology and many questions about the application of the rules may arise, we believe that TCBs should not be permitted to certify Access BPL systems or approve permissive changes to Access BPL systems until the Chief of the Office of Engineering and Technology acting under the existing delegated authority announces that TCBs may certify Access BPL systems.

#### *Miscellaneous*

51. *Transition Period and Grandfathering of Existing Access BPL Equipment.* We note that the major differences between the existing part 15 rules for carrier current systems and the newly adopted rules in subpart G for Access BPL are (1) the type of equipment authorization procedure—Verification for existing carrier current systems, Certification for Access BPL systems; (2) the requirement for interference mitigation techniques and avoidance of excluded bands and exclusion zones for Access BPL systems; and (3) the requirement for an Access BPL database concurrent with consultation with licensed spectrum users. Insofar as existing deployed Access BPL systems can satisfy (2) and (3) by working with licensed spectrum users to avoid co-channel operations, and by being listed in the Access BPL database, the requirements of (1) can be satisfied by having compliance test data

available for inspection during the transition period. We clarify that after the transition period, all Access BPL devices that are manufactured, imported, marketed or installed shall comply with the requirements specified in subpart G of part 15, including certification of the equipment.

52. We believe that it would be an undue burden on those operators who have deployed Access BPL systems to require their systems to come into compliance with the rules adopted herein, as long as the deployed equipment does not cause harmful interference and the operator takes the necessary steps to eliminate occurrences of harmful interference. We agree with Progress Energy that once a system has been installed and is operating within the limits and requirements in place when it was installed, the system should be allowed to remain in operation. We will, of course, require that all Access BPL systems and equipment comply with the non-interference rule of part 15, that is, there is not transition period for compliance with the emission limits, which we are not changing. We find that Access BPL equipment should be allowed a transition period for compliance with new rules, in the manner that we typically provide for other part 15 devices. This will minimize economic hardships on manufacturers by allowing them, during the transition period, to continue producing and selling existing equipment while modifying their products to meet the new requirements. If an Access BPL device does not cause harmful interference, it can continue to operate until its natural replacement, unless the equipment is subsequently modified, at which time it must be brought into compliance with the new rules. We believe that a transition time frame of 18 months is adequate as this represents the typical high tech equipment life cycle. Accordingly, we are adopting a cut-off date of 18 months from the date of publication of this Report and Order. All Access BPL devices that are manufactured, imported, marketed or installed July 7, 2006 shall comply with the requirements specified in subpart G of this part, including certification of the equipment. Access BPL equipment manufactured, imported, marketed and installed prior to this date shall comply with the requirements that were in effect immediately prior to the effective date of this Report and Order.

53. *Separate Rule Part for Access BPL Systems.* NTIA and IEEE 802.18 advocate the creation of a new, dedicated rule part or a separate subpart of part 15 for Access BPL systems,

because many of the adopted rules will be unique to Access BPL. We find that the complete separation of the rules for Access BPL equipment from part 15 inadvisable due to possible confusion and repetition of requirements in two places, as Access BPL equipment must comply with the general requirements for unlicensed devices of subparts A–C of the existing part 15 rules. We do, however, find that requirements specific to Access BPL equipment warrant the creation of a separate subpart of part 15. Accordingly, we are adding subpart G to part 15 of our rules which will contain unique requirements for Access BPL equipment, with cross reference to other applicable subparts.

54. *Motions and Requests.* We have received several motions and requests for additional extensions of time and for reiteration of proposals to take into account information added to the record since the *NPRM*. We are generally considering the substance of these motions and requests as filed comments, and denying the specific procedural remedies requested, as they offer no new information or arguments sufficient to justify procedural delays, nor do they raise issues beyond those already explicitly or implicitly included in the record and capable of full consideration in this Order.

#### Final Regulatory Flexibility Analysis

55. As required by the Regulatory Flexibility Act (“RFA”),<sup>1</sup> an Initial Regulatory Flexibility Analysis (“IRFA”) was incorporated in the *Notice of Proposed Rule Making* (“NPRM”) in this proceeding, ET Docket Nos. 04–37 & 03–104. The Commission sought written public comment on the proposals in the NPRM, including comment on the IRFA. This Final Regulatory Flexibility Analysis (“FRFA”) conforms to the RFA.<sup>2</sup>

##### A. Need for, and Objectives of, the Report and Order

56. By this action, the Commission amends part 15 of the rules for radio frequency (RF) devices regarding Access Broadband over Power Line (Access BPL), a new type of carrier current system that operates on an unlicensed basis under part 15. Access BPL systems use existing electrical power lines as a transmission medium to provide high-speed communications capabilities by coupling RF energy onto the power line. Given that power lines reach virtually

every residence and business in every community and geographic area in this country, Access BPL service could be made available nearly everywhere. This new broadband delivery medium could also serve to introduce additional competition to existing cable, DSL, and other broadband services. At the same time, we recognize the concerns of authorized radio services in both the private and government sectors for the need to ensure that RF energy from BPL signals on power lines does not cause harmful interference to licensed radio services. Our goals in developing the rules for Access BPL therefore are to provide a framework that will both facilitate the rapid introduction and development of BPL systems and protect licensed radio services from harmful interference. Specifically, we adopted in the Report and Order: (1) New operational requirements for Access BPL to promote avoidance and resolution of harmful interference; (2) new administrative requirements to aid in identifying Access BPL installations; and (3) specific measurement guidelines and certification requirements to allow accurate and repeatable evaluations of emissions from Access BPL and all other carrier current systems. These actions will further the development of BPL systems by removing regulatory uncertainties for BPL operators and equipment manufacturers and facilitate the continued deployment of these new broadband networks while ensuring that licensed radio services are protected from harmful interference. The record and our investigations indicate that BPL network systems can generally be configured and managed to minimize and/or eliminate this interference potential.

##### B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

57. No comments were filed in response to the IRFA.

##### C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply

58. The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the rules adopted herein.<sup>3</sup> The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”<sup>4</sup> In addition, the term

<sup>1</sup> See 5 U.S.C. 603. The RFA, see 5 U.S.C. 601–612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. 104–121, Title II, 110 Stat. 857 (1996).

<sup>2</sup> See 5 U.S.C. 604.

<sup>3</sup> 5 U.S.C. 604(a)(3).

<sup>4</sup> 5 U.S.C. 601(6).

“small business” has the same meaning as the term “small business concern” under the Small Business Act.<sup>5</sup> A “small business concern” is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).<sup>6</sup>

59. The rules adopted in the Report and Order pertain to manufacturers of unlicensed communications devices. The appropriate small business size standard is that which the SBA has established for radio and television broadcasting and wireless communications equipment manufacturing. This category encompasses entities that primarily manufacture radio, television, and wireless communications equipment.<sup>7</sup> Under this standard, firms are considered small if they have 750 or fewer employees.<sup>8</sup> Census Bureau data for 1997 indicate that, for that year, there were a total of 1,215 establishments<sup>9</sup> in this category.<sup>10</sup> Of those, there were 1,150 that had employment under 500, and an additional 37 that had employment of 500 to 999. The percentage of wireless equipment manufacturers in this category is approximately 61.35%,<sup>11</sup> so the Commission estimates that the number of wireless equipment manufacturers with employment under 500 was actually closer to 706, with an additional 23 establishments having employment of between 500 and 999. Given the above, the Commission

estimates that the great majority of wireless communications equipment manufacturers are small businesses.

#### *D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements*

60. Although a large number of part 15 radio frequency devices are already required to be authorized under the Commission’s Certification, Declaration of Conformity, or Verification procedures as a prerequisite to marketing and importation, the adopted rules add a slight amount of new testing and reporting requirements, to ensure protection of licensed spectrum users from harmful interference. These requirements include the proposed technical requirement for adaptive interference mitigation capabilities and the proposed notification of Access BPL systems in a database similar to the one required for existing Power Line Carrier systems. The major differences between the existing part 15 rules for carrier current systems and the newly adopted rules in subpart G for Access BPL are (1) the type of equipment authorization procedure,—Verification for existing carrier current systems, Certification for Access BPL systems; (2) the requirement for interference mitigation techniques and avoidance of excluded bands and exclusion zones for Access BPL systems; and (3) the requirement for an Access BPL database concurrent with consultation with licensed spectrum users. Because Access BPL systems operate in the High Frequency (HF) and in the low Very High Frequency (VHF) of the spectrum, they must co-exist with numerous private and governmental authorized radio services. As such, they present concerns for these licensed users, given the propagation characteristics of radio frequency signals in these ranges of frequencies, the diversity of users of these frequencies, and the fact that Access BPL devices will be installed at many locations in an area, primarily over unshielded power lines. However, the record and our own investigations indicate that BPL network systems can generally be configured and managed to minimize and/or eliminate this interference potential, through the use of consultation with licensed services and identification of installed Access BPL equipment in a database, as well as the adoption of precise measurement procedures. The adopted certification procedure for Access BPL systems will therefore help provide a more detailed record of their characteristics toward this objective.

61. Although the adopted rules do somewhat increase the reporting and

recordkeeping requirements for Access BPL systems, the benefit of ensuring protection to critical systems operated by law enforcement groups, government users and emergency operations outweighs this small cost that will permit the growth of Access BPL in the shared spectrum.

#### *E. Steps Taken To Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered*

62. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives: (1) The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.

63. In the Report and Order, we maintained the existing part 15 emission limits, which are applicable to all part 15 devices, including BPL. We have adopted new measurement guidelines for BPL and existing carrier current systems, to assist manufacturers and testing entities to follow clearer and more precise measurement procedures in the testing of BPL and carrier current systems (CCS), which will help in eliminating confusion and repetitive and costly compliance testing. Although we changed the equipment authorization procedure from Verification to Certification for Access BPL systems, this is because Access BPL systems operate in a different environment than other unlicensed part 15 devices and to avoid overburdening the information that would otherwise be required to be submitted into the Access BPL database. We have adopted a simple Access BPL database format for the notification of Access BPL systems, rather than a complex one with all-inclusive and more comprehensive information. We have narrowed down the list of absolutely necessary licensed entities that Access BPL providers must consult with prior to operating in their bands, as well as the list of exclusion zones and excluded frequency bands in which Access BPL are prohibited from operating. We have provided a generous time frame for a transition period, thus allowing existing systems to continue to operate, as long as they do not cause harmful interference to other authorized radio services. Finally, the rules will

<sup>5</sup> 5 U.S.C. 601(3) (incorporating by reference the definition of “small-business concern” in the Small Business Act, 15 U.S.C. 632). Pursuant to 5 U.S.C. 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the *Federal Register*.”

<sup>6</sup> 15 U.S.C. 632.

<sup>7</sup> NAICS code 334220.

<sup>8</sup> *Id.*

<sup>9</sup> The number of “establishments” is a less helpful indicator of small business prevalence in this context than would be the number of “firms” or “companies,” because the latter take into account the concept of common ownership or control. Any single physical location for any entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census breaks-out data for firms or companies only to give the total number of such entities for 1997, which was 1,089.

<sup>10</sup> U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, “Industry Statistics by Employment Size,” Table 4, NAICS code 334220 (issued August 1999).

<sup>11</sup> *Id.* Table 5, “Industry Statistics by Industry and Primary Product Class Specialization: 1997.”

apply equally to large and small entities. Therefore, there is no inequitable impact on small entities.

64. We believe that the rules adopted are equitable, balancing the critical needs of licensed radio users for protection against harmful interference, with facilitating the development of Access BPL by removing regulatory uncertainties. For the reasons stated we find that the rule changes contained in this Report and Order will not present a significant economic burden to small entities.

*Report to Congress*

65. The Commission will send a copy of the Report and Order, including this FRFA, in a report to Congress pursuant to the Congressional Review Act.<sup>12</sup> In addition, the Commission will send a copy of the Report and Order, including the FRFA, to the Chief Counsel for Advocacy of the SBA.<sup>13</sup>

**Ordering Clauses**

66. Pursuant to the authority contained in Sections 4(i), 301, 302, 303(e), 303(f), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 301, 302, 303(e), 303(f), and 303(r), part 15 of the Commission's Rules are amended, as specified in Appendix B in the Report and Order, effective 30 days after **Federal Register** publication, except for §§ 15.615(a) through (e) which contains information collection requirements that are not effective until approved by the Office of Management and Budget. The FCC will publish a document in the **Federal Register** announcing the effective date for those sections.

67. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, shall send a copy of this Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

**List of Subjects in 47 CFR Part 15**

Communications equipment, Radio.  
Federal Communications Commission.  
**William F. Caton,**  
*Deputy Secretary.*

**Rule Changes**

■ For the reasons set forth in the preamble, the Federal Communications

Commission amends 47 CFR part 15 as follows:

**PART 15—RADIO FREQUENCY DEVICES**

■ 1. The authority citation for part 15 continues to read as follows:

**Authority:** 47 U.S.C. 154, 302, 303, 304, 307 and 544A.

■ 2. Section 15.3 is amended by adding paragraphs (ff) and (gg) to read as follows:

**§ 15.3 Definitions.**

\* \* \* \* \*

(ff) *Access Broadband over Power Line (Access BPL).* A carrier current system installed and operated on an electric utility service as an unintentional radiator that sends radio frequency energy on frequencies between 1.705 MHz and 80 MHz over medium voltage lines or over low voltage lines to provide broadband communications and is located on the supply side of the utility service's points of interconnection with customer premises. Access BPL does not include power line carrier systems as defined in § 15.3(t) or In-House BPL as defined in § 15.3(gg).

(gg) *In-House Broadband over Power Line (In-House BPL).* A carrier current system, operating as an unintentional radiator, that sends radio frequency energy by conduction over electric power lines that are not owned, operated or controlled by an electric service provider. The electric power lines may be aerial (overhead), underground, or inside the walls, floors or ceilings of user premises. In-House BPL devices may establish closed networks within a user's premises or provide connections to Access BPL networks, or both.

■ 3. Section 15.15 is amended by revising paragraph (b) to read as follows:

**§ 15.15 General technical requirements.**

\* \* \* \* \*

(b) Except as follows, an intentional or unintentional radiator must be constructed such that the adjustments of any control that is readily accessible by or intended to be accessible to the user will not cause operation of the device in violation of the regulations. Access BPL

equipment shall comply with the applicable standards at the control adjustment that is employed. The measurement report used in support of an application for Certification and the user instructions for Access BPL equipment shall clearly specify the user- or installer-control settings that are required for conformance with these regulations.

\* \* \* \* \*

■ 4. Section 15.31 is amended by revising paragraph (f)(5), to read as follows:

**§ 15.31 Measurement standards.**

\* \* \* \* \*

(f) \* \* \*

(5) Measurements shall be performed at a sufficient number of radials around the equipment under test to determine the radial at which the field strength values of the radiated emissions are maximized. The maximum field strength at the frequency being measured shall be reported in the equipment authorization report. This paragraph shall not apply to Access BPL equipment on overhead medium voltage lines. In lieu thereof, the measurement guidelines established by the Commission for Access BPL shall be followed.

\* \* \* \* \*

■ 5. Section 15.37 is amended by adding paragraph (m) to read as follows:

**§ 15.37 Transition provisions for compliance with the rules.**

\* \* \* \* \*

(m) All Access BPL devices that are manufactured, imported, marketed or installed on or after July 7, 2006, shall comply with the requirements specified in subpart G of this part, including certification of the equipment.

■ 6. Section 15.101 is amended by revising the table in paragraph (a) to read as follows:

**§ 15.101 Equipment authorization of unintentional radiators.**

(a) \* \* \*

Type of device	Equipment authorization required
TV broadcast receiver .....	Verification.
FM broadcast receiver .....	Verification.
CB receiver .....	Declaration of Conformity or Certification.
Superregenerative receiver .....	Declaration of Conformity or Certification.

<sup>12</sup> See 5 U.S.C. 801(a)(1)(A).

<sup>13</sup> See 5 U.S.C. 604(b).

Type of device	Equipment authorization required
Scanning receiver .....	Certification.
Radar detector .....	Certification.
All other receivers subject to part 15 .....	Declaration of Conformity or Certification.
TV interface device .....	Declaration of Conformity or Certification.
Cable system terminal device .....	Declaration of Conformity.
Stand-alone cable input selector switch .....	Verification.
Class B personal computers and peripherals .....	Declaration of Conformity or Certification. <sup>1</sup>
CPU boards and internal power supplies used with Class B personal computers .....	Declaration of Conformity or Certification. <sup>1</sup>
Class B personal computers assembled using authorized CPU boards or power supplies .....	Declaration of Conformity.
Class B external switching power supplies .....	Verification.
Other Class B digital devices & peripherals .....	Verification.
Class A digital devices, peripherals & external switching power supplies .....	Verification.
Access Broadband over Power Line (Access BPL) .....	Certification.
All other devices .....	Verification.

\* \* \* \* \*

■ 7. Part 15 is amended by adding a new Subpart G, to read as follows:

**Subpart G—Access Broadband Over Power Line (Access BPL)**

- Sec.
- 15.601 Scope.
- 15.603 Definitions.
- 15.605 Cross reference.
- 15.607 Equipment authorization of Access BPL equipment.
- 15.609 Marketing of Access BPL equipment.
- 15.611 General technical requirements.
- 15.613 Measurement procedures.
- 15.615 General administrative requirements.

**§ 15.601 Scope.**

This subpart sets out the regulations for Access Broadband over Power Line (Access BPL) devices operating in the 1.705–80 MHz band over medium or low voltage lines.

**§ 15.603 Definitions.**

- (a) *Excluded Band*: A band of frequencies within which Access BPL operations are not permitted.
- (b) *Exclusion Zone*: A geographical area within which Access BPL operations are not permitted in certain frequency bands.
- (c) *Consultation*. The process of communication between an entity operating Access BPL and a licensed public safety or other designated point of contact for the purpose of avoiding potential harmful interference.
- (d) *Consultation area*: A designated geographical area within which consultation with public safety users or other designated point of contact is required before an Access BPL may be operated at designated frequencies.
- (e) *Low Voltage power line*. A power line carrying low voltage, e.g., 240/120 volts from a distribution transformer to a customer’s premises.
- (f) *Medium Voltage power line*. A power line carrying between 1,000 to 40,000 volts from a power substation to

neighborhoods. Medium voltage lines may be overhead or underground, depending on the power grid network topology.

(g) *Access BPL Database*. A database operated by an industry-sponsored entity, recognized by the Federal Communications Commission and the National Telecommunications and Information Administration (NTIA), containing information regarding existing and planned Access BPL systems, as required in § 15.615(a) of this chapter.

**§ 15.605 Cross reference.**

(a) The provisions of subparts A and B of this part apply to Access BPL devices, except where specifically noted. The provisions of subparts C through F of this part do not apply to Access BPL devices except where specifically noted.

(b) The requirements of this subpart apply only to the radio circuitry that is used to provide carrier current operation for the Access BPL device. Other aspects of the operation of an Access BPL device may be subject to requirements contained elsewhere in this chapter. In particular, an Access BPL device that includes digital circuitry that is not used solely to enable the operation of the radio frequency circuitry used to provide carrier current operation also is subject to the requirements for unintentional radiators in subpart B of this part.

**§ 15.607 Equipment authorization of Access BPL equipment.**

Access BPL equipment shall be subject to Certification as specified in § 15.101.

**§ 15.609 Marketing of Access BPL equipment.**

The marketing of Access BPL equipment must be directed solely to parties eligible to operate the equipment. Eligible parties consist of AC power line public utilities, Access

BPL service providers and associates of Access BPL service providers. The responsible party, as defined in § 2.909 of this chapter, is responsible for ensuring that the equipment is marketed only to eligible parties. Marketing of the equipment in any other manner may be considered grounds for revocation of the grant of certification issued for the equipment.

**§ 15.611 General technical requirements.**

(a) *Conducted emission limits*. Access BPL is not subject to the conducted emission limits of § 15.107.

(b) *Radiated emission limits*. (1) *Medium voltage power lines*. (i) Access BPL systems that operate in the frequency range of 1.705 kHz to 30 MHz over medium voltage power lines shall comply with the radiated emission limits for intentional radiators provided in § 15.209.

(ii) Access BPL systems that operate in the frequency range above 30 MHz over medium voltage power lines shall comply with the radiated emission limits provided in § 15.109(b).

(2) *Low voltage power lines*. Access BPL systems that operate over low-voltage power lines, including those that operate over low-voltage lines that are connected to the in-building wiring, shall comply with the radiated emission limits provided in § 15.109(a) and (e).

(c) *Interference Mitigation and Avoidance*. (1) Access BPL systems shall incorporate adaptive interference mitigation techniques to remotely reduce power and adjust operating frequencies, in order to avoid site-specific, local use of the same spectrum by licensed services. These techniques may include adaptive or “notch” filtering, or complete avoidance of frequencies, or bands of frequencies, locally used by licensed radio operations.

(i) For frequencies below 30 MHz, when a notch filter is used to avoid interference to a specific frequency band, the Access BPL system shall be

capable of attenuating emissions within that band to a level at least 20 dB below the applicable part 15 limits.

(ii) For frequencies above 30 MHz, when a notch filter is used to avoid interference to a specific frequency band, the Access BPL system shall be capable of attenuating emissions within that band to a level at least 10 dB below the applicable part 15 limits.

(2) Access BPL systems shall comply with applicable radiated emission limits upon power-up following a fault condition, or during a start-up operation after a shut-off procedure, by the use of a non-volatile memory, or some other method, to immediately restore previous settings with programmed notches and excluded bands, to avoid time delay caused by the need for manual re-programming during which protected services may be vulnerable.

(3) Access BPL systems shall incorporate a remote-controllable shut-down feature to deactivate, from a central location, any unit found to cause harmful interference, if other interference mitigation techniques do not resolve the interference problem.

#### **§ 15.613 Measurement procedures.**

Compliance measurements for Access BPL shall be made in accordance with the Guidelines for Access BPL systems specified by the Commission.

#### **§ 15.615 General administrative requirements.**

(a) *Access BPL Database.* Entities operating Access BPL systems shall supply to an industry-recognized entity, information on all existing Access BPL systems and all proposed Access BPL systems for inclusion into a publicly available data base, within 30 days prior to initiation of service. Such information shall include the following:

(1) The name of the Access BPL provider.

(2) The frequencies of the Access BPL operation.

(3) The postal zip codes served by the specific Access BPL operation.

(4) The manufacturer and type of Access BPL equipment and its associated FCC ID number, or, in the case of Access BPL equipment that has been subject to verification, the Trade Name and Model Number, as specified on the equipment label.

(5) The contact information, including both phone number and e-mail address of a person at, or associated with, the BPL operator's company, to facilitate the resolution of any interference complaint.

(6) The proposed/or actual date of Access BPL operation.

(b) The Access BPL database manager shall enter this information into the publicly accessible database within three (3) business days of receipt.

(c) No notification to the Commission is required.

(d) A licensed spectrum user experiencing harmful interference that is suspected to be caused by an Access BPL system shall inform the local BPL operator's contact person designated in the Access BPL database. The investigation of the reported interference and the resolution of confirmed harmful interference from the Access BPL system shall be successfully completed by the BPL operator within a reasonable time period according to a mutually acceptable schedule, after the receipt of an interference complaint, in order to avoid protracted disruptions to licensed services. The Access BPL operator shall respond to complaints of harmful interference from public safety users within 24 hours. With regard to public safety complaints, the BPL provider shall be required to immediately cease the operations causing such complaint if it fails to respond within 24 hours.

(e) *Consultation with public safety users.* An entity operating an Access BPL system shall notify and consult with the public safety users in the area where it plans to deploy Access BPL, at least 30 days prior to initiation of any operation or service. This entity shall design or implement the Access BPL system such that it does not cause harmful interference in those frequencies or bands used by the public safety agencies in the area served by the Access BPL system. The notification shall include, at a minimum, the information in paragraph (a) of this section.

(f) *Federal government spectrum users and other radio service users.* An entity operating an Access BPL system shall ensure that, within its Access BPL deployment area, its system does not operate on any frequencies designated as excluded bands or on identified frequencies within any designated exclusion zones.

(1) *Excluded Bands.* To protect Aeronautical (land) stations and aircraft receivers, Access BPL operations using overhead medium voltage power lines are prohibited in the frequency bands listed in Table 1. Specifically, such BPL systems shall not place carrier frequencies in these bands.

TABLE 1.—EXCLUDED FREQUENCY BANDS

Frequency band
2,850–3,025 kHz
3,400–3,500 kHz
4,650–4,700 kHz
5,450–5,680 kHz
6,525–6,685 kHz
8,815–8,965 kHz
10,005–10,100 kHz
11,275–11,400 kHz
13,260–13,360 kHz
17,900–17,970 kHz
21,924–22,000 kHz
74.8–75.2 MHz

(2) *Exclusion zones.* Exclusion zones encompass the operation of any Access BPL system within 1 km of the boundary of coast station facilities at the coordinates listed in Tables 2 and 2.1. Exclusion zones also encompass the operation of Access BPL systems using overhead medium voltage power lines within 29 km of the coordinates for the ten Very Long Baseline Array facilities listed in Allocation US311. Exclusion zones further encompass the operation of Access BPL systems using overhead low voltage power lines or underground power lines within 11 km of the coordinates for the ten Very Long Baseline Array facilities listed in Allocation US311. Within the exclusion zones for coast stations, Access BPL systems shall not use carrier frequencies within the band of 2173.5–2190.5 kHz. Within the exclusion zone for Very Long Baseline Array radio astronomy observatories, Access BPL systems shall not use carrier frequencies within the 73.0–74.6 MHz band.

(i) *Existing coast station facilities.* Access BPL systems shall not operate in the frequency band 2,173.5–2,190.5 kHz, within 1 kilometer (km) of the boundary of coast station facilities at the coordinates listed in Tables 2 and 2.1. BPL operators planning to deploy Access BPL devices at these frequencies in areas within these exclusion zones as defined above shall consult with the appropriate point of contact for these coast stations to ensure harmful interference is prevented at these facilities.

Point of contact: Commandant (CG 622), U.S. Coast Guard, 2100 2nd Street, SW., Washington, DC 20593-0001, Telephone: (202) 267-2860, e-mail: [cgcomms@comdt.uscg.mil](mailto:cgcomms@comdt.uscg.mil).



TABLE 2.—EXCLUSION ZONES FOR U.S. COAST GUARD COAST STATIONS

Locale	Latitude	Longitude
Group Guam	13°35'23" N	144°50'24" E
GANTSEC	18°18'00" N	65°46'59" W
Puerto Rico	18°28'11" N	66°07'47" W
Honolulu	21°18'21" N	157°53'23" W
Group Key West	24°33'35" N	81°47'59" W
Trumbo Point CG Base	24°33'58" N	81°47'57" W
Miami	25°37'28" N	80°23'07" W
Everglades Park	25°50'10" N	81°23'13" W
Group Saint Petersburg (Everglades)	25°51'00" N	81°23'24" W
Station Ft. Lauderdale	26°05'21" N	80°06'40" W
Station Ft. Myers Beach	26°27'34" N	81°57'15" W
Group Miami (Ft. Pierce)	27°27'36" N	80°18'36" W
Station Ft. Pierce	27°27'50" N	80°18'27" W
Group Corpus Christi	27°42'01" N	97°16'11" W
Group Corpus Christi	27°42'06" N	97°16'45" W
ESD Saint Petersburg	27°45'21" N	82°37'32" W
Group Saint Petersburg	27°46'11" N	82°37'47" W
Station Port O'Connor	28°26'03" N	96°25'39" W
S. Padre Island	28°26'22" N	97°09'56" W
Freeport	28°55'59" N	95°16'59" W
Group Galveston (Freeport)	28°56'24" N	95°17'59" W
Station YANKEETOWN	29°01'51" N	82°43'39" W
Station Ponce De Leon Inlet	29°03'50" N	81°55'01" W
Group New Orleans (Grand Isle)	29°15'53" N	89°57'26" W
Galveston	29°19'59" N	94°46'18" W
Kapalan	29°20'04" N	94°47'17" W
Sabine	29°43'42" N	93°52'14" W
New Orleans	30°01'17" N	90°07'24" W
Panama City	30°10'01" N	85°45'04" W
Group Mobile (Panama City)	30°10'12" N	85°45'36" W
ANT Jacksonville Beach	30°17'16" N	81°24'10" W
Pensacola	30°20'24" N	87°18'17" W
Group Mayport	30°23'10" N	81°26'01" W
Group Mayport	30°23'24" N	81°25'48" W
Ft. Morgan	30°39'07" N	88°03'12" W
Tybee Lighthouse	32°01'15" N	80°50'39" W
Point Loma Lighthouse	32°39'56" N	117°14'34" W
Point Loma	32°40'07" N	117°14'14" W
Activities San Diego	32°43'59" N	117°11'13" W
Group Charleston (Sullivan's Island)	32°45'00" N	79°49'47" W
Sullivan's Island Lights	32°45'02" N	79°50'03" W
Group Charleston	32°46'25" N	79°56'37" W
Group San Diego	32°52'48" N	118°26'23" W
San Pedro	33°45'00" N	118°15'58" W
Group Fort Macon	33°53'24" N	78°01'48" W
Point Mugu	33°59'32" N	119°07'18" W
Group LA/Long Beach	34°07'11" N	119°06'35" W
Channel Island	34°09'17" N	119°13'11" W
Station Oxnard Channel Island	34°09'43" N	119°13'19" W
Group Ft. Macon	34°41'48" N	76°40'59" W
Group Cape Hatteras	35°13'59" N	75°31'59" W
Group Cape Hatteras	35°15'35" N	75°31'48" W
Morro Bay (Cambria)	35°31'21" N	121°03'31" W
San Clemente Island	32°50'24" N	118°23'15" W
Point Pinos	36°38'12" N	121°56'06" W
CAMSLANT	36°43'47" N	76°01'11" W
Group Hampton Roads	36°53'01" N	76°21'10" W
Point Montara	37°31'23" N	122°30'47" W
Point Montara Lighthouse	37°32'09" N	122°31'08" W
Group San Francisco	37°32'23" N	122°31'11" W
Group San Francisco	37°48'34" N	122°21'55" W
Point Bonita	37°49'00" N	122°31'41" W
Group Eastern Shores	37°55'47" N	75°22'47" W
Group Eastern Shore	37°55'50" N	75°22'58" W
CAMSPAC	38°06'00" N	122°55'48" W
Point Arena Lighthouse	38°57'18" N	124°44'28" W
Point Arena	38°57'36" N	123°44'23" W
Group Atlantic City	39°20'59" N	74°27'42" W
Activities New York	40°36'06" N	74°03'36" W
Activities New York	40°37'11" N	74°04'11" W
ESD Moriches Hut	40°47'19" N	72°44'53" W
Group Moriches	40°47'23" N	72°45'00" W

TABLE 2.—EXCLUSION ZONES FOR U.S. COAST GUARD COAST STATIONS—Continued

Locale	Latitude	Longitude
Group Humboldt Bay	40°58'41" N	124°06'31" W
Group Humboldt Bay	40°58'47" N	124°06'35" W
Trinidad Head	41°03'15" N	124°09'02" W
Group Long Island Sound	41°16'12" N	72°54'00" W
Station New Haven	41°16'12" N	72°54'06" W
Station Brant Point	41°17'21" N	70°05'31" W
Group Woods Hole	41°17'23" N	70°04'47" W
Station Castle Hill	41°27'46" N	71°21'42" W
Group Woods Hole	41°17'29" N	70°40'07" W
Boston Area	41°40'12" N	70°31'48" W
Station Provincetown	42°01'48" N	70°12'42" W
Eastern Point	42°36'24" N	70°39'26" W
Cape Blanco	42°50'16" N	124°33'52" W
Group North Bend	43°24'16" N	124°13'22" W
Group North Bend	43°24'35" N	124°14'23" W
Cape Elizabeth	43°33'28" N	70°12'00" W
Group South Portland	43°38'24" N	70°15'00" W
Group South Portland	43°38'45" N	70°14'51" W
Group SW Harbor	44°16'19" N	68°18'27" W
Group Southwest Harbor	44°16'48" N	68°18'36" W
Fort Stevens, Oregon	46°09'14" N	123°53'07" W
Group Astoria	46°09'29" N	123°31'48" W
Group Astoria	46°09'35" N	123°53'24" W
La Push	47°49'00" N	124°37'59" W
Station Quillayute River	47°54'49" N	124°38'01" W
Port Angeles	48°07'59" N	123°25'59" W
Group Port Angeles	48°08'24" N	123°24'35" W
Juneau (Sitka)	57°05'24" N	135°15'35" W
Kodiak	57°40'47" N	152°28'47" W
Valdez (Cape Hinchinbrook)	60°26'23" N	146°25'48" W

Note: Systems of coordinates comply with NAD 83.

TABLE 2.1.—EXCLUSION ZONES FOR MARITIME PUBLIC COAST STATIONS  
[Points of Contact Are Identified in the Commission's License Database]

Licensee name	Location	Latitude	Longitude
Shipcom LLC	Marina Del Ray, CA	33°56'21" N	118°27'14" W
Globe Wireless	Rio Vista, CA	38°11'55" N	121°48'34" W
Avalon Communications Corp	St. Thomas, VI	18°21'19" N	64°56'48" W
Globe Wireless	Bishopville, MD	38°24'10" N	75°12'59" W
Shipcom LLC	Mobile, AL	30°40'07" N	88°10'23" W
Shipcom LLC	Coden, AL	30°22'35" N	88°12'20" W
Globe Wireless	Pearl River, LA	30°22'13" N	89°47'26" W
Globe Wireless	Kahalelani, HI	21°10'33" N	157°10'39" W
Globe Wireless	Palo Alto, CA	37°26'44" N	122°06'48" W
Globe Wireless	Agana, GU	13°29'22" N	144°49'39" E

Note: Systems of coordinates comply with NAD 83.

(ii) *New or relocated Coast stations.* In the unlikely event that a new or relocated coast station is established for the 2.173.5–2.190.5 kHz band at a coordinate not specified in Table 2 or 2.1, Access BPL operations in that frequency band shall also be excluded within 1 km of the new coast station facility;

(iii) *Very Long Baseline Array (VLBA) radio astronomy observatories.* Access BPL systems using overhead medium voltage power lines shall not operate in the frequency band 73.0–74.6 MHz, within 29 km of the coordinates of the ten (10) Very Long Baseline Array facilities listed in 47 CFR 2.106, Note

US311. Access BPL systems using overhead low voltage power lines or underground power lines shall not operate in the 73.0–74.6 MHz band within 11 km of those coordinates.

(3) *Consultation areas.* Access BPL operators shall provide notification to the appropriate point of contact specified below regarding Access BPL operations at any frequencies of potential concern in the following consultation areas, at least 30 days prior to initiation of any operation or service. The notification shall include, at a minimum, the information in paragraph (a) of this section. We expect parties to consult in good faith to ensure that no

harmful interference is caused to licensed operations and that any constraints on BPL deployments are minimized to those necessary to avoid harmful interference.

(i) For frequencies in the 1.7–30 MHz frequency range, the areas within 4 km of facilities located at the following coordinates:

(A) The Commission's protected field offices listed in 47 CFR 0.121, the point-of-contact for which is specified in that section;

(B) The aeronautical stations listed in Tables 3a and 3b;

(C) The land stations listed in Tables 4 and 5;

(ii) For frequencies in the 1.7–38.25 MHz frequency range, the areas within 4 km of facilities located at the coordinates specified for radio astronomy facilities in 47 CFR 2.106, Note US 311.

(iii) For frequencies in the 1.7–80 MHz frequency range, the area within 1

km of the Table Mountain Radio Receiving Zone, the coordinates and point of contact for which are specified in 47 CFR 21.113(b).

(iv) For frequencies in the 1.7–30 MHz frequency range, the areas within 37 km of radar receiver facilities located at the coordinates specified in Table 6.

*Point of contact:* U.S. Coast Guard HQ, Division of Spectrum Management CG–622, 2100 Second St., SW., Rm. 6611, Washington, DC 20593, Tel: (202) 267–6036, Fax: (202) 267–4106, e-mail: [jtaboada@comdt.uscg.mil](mailto:jtaboada@comdt.uscg.mil).

TABLE 3a.—CONSULTATION AREA COORDINATES FOR AERONAUTICAL (OR) STATIONS (1.7–30 MHz)

Command name	Location	Latitude	Longitude
Washington	Arlington, VA	38°51'07" N	77°02'15" W
Cape Cod	Cape Cod, MA	41°42'00" N	70°30'00" W
Atlantic City	Atlantic City, NJ	39°20'59" N	74°27'42" W
Elizabeth City	Elizabeth City, NC	36°15'53" N	76°10'32" W
Savannah	Savannah, GA	32°01'30" N	81°08'30" W
Miami	Opa Locka, FL	25°54'22" N	80°16'01" W
Clearwater	Clearwater, FL	27°54'27" N	82°41' 29" W
Borinquen	Aguadilla, PR	18°18'36" N	67°04' 48" W
New Orleans	New Orleans, LA	29°49'31" N	90°02' 06" W
Traverse City	Traverse City, MI	44°44'24" N	85°34'54" W
San Diego	San Diego, CA	32°43'33" N	117°10' 15" W
Sacramento	McClellan AFB, CA	38°40'06" N	121°24'04" W
Astoria	Warrenton, OR	46°25'18" N	123°47' 46" W
North Bend	North Bend, OR	43°24'39" N	124°14'35" W
Barbers Point	Kapolei, HI	21°18'01" N	158°04'15" W
Kodiak	Kodiak, AK	57°44'19" N	152°30'18" W
Houston	Houston, TX	29°45'00" N	95°22'00" W
Detroit	Mt. Clemens, MI	42°36'05" N	82°50'12" W
San Francisco	San Francisco, CA	37°37'58" N	122°23'20" W
Los Angeles	Los Angeles, CA	33°56'36" N	118°23'48" W
Humboldt Bay	McKinleyville, CA	40°58'39" N	124°06'45" W
Port Angeles	Port Angeles, WA	48°08'25" N	123°24'48" W
Sitka	Sitka, AK	57°05'50" N	135°21'58" W

**Note:** Systems of coordinates conform to NAD 83.

*Point of contact:* ARINC, 2551 Riva Road, Annapolis, MD 21401, Tel: 1–800–633–6882, Fax: (410) 266–2329, e-

mail: [arincmkt@arinc.com](mailto:arincmkt@arinc.com), <http://www.arinc.com>.

TABLE 3b.—CONSULTATION AREA COORDINATES FOR AERONAUTICAL RECEIVE STATIONS (1.7–30 MHz)

Locale	Latitude	Longitude
Southampton, NY	40°55'15" N	72°23'41" W
Molokai, HI	21°12'23" N	157°12'30" W
Oahu, HI	21°22'27" N	158°05'56" W
Half Moon Bay, CA	37°39'00" N	122°41'00" W
Pt. Reyes, CA	38°06'00" N	122°56'00" W
Barrow, AK	71°17'24" N	156°48'12" W
Guam	13°25'00" N	144°44'57" E
		(note: Eastern N Hemisphere)
NY Comm Center, NY	40°46'48" N	73°05'46" W
Cedar Rapids, IA	42°02'05.0" N	91°38'37.6" W
Beaumont, CA	33°54'27.1" N	116°59'49.1" W
Fairfield, TX	31°47'02.6" N	96°47'03.0" W
Houston, TX	29°36'35.8" N	95°16'54.8" W
Miami, FL	25°49'05" N	80°18'28" W

**Note:** Systems of coordinates conform to NAD 83.

*Point of contact:* U.S. Coast Guard HQ, Division of Spectrum Management

CG–622, 2100 Second St., SW., Rm. 6611, Washington, DC 20593, Tel: (202)

267–6036, Fax: (202) 267–4106, e-mail: [jtaboada@comdt.uscg.mil](mailto:jtaboada@comdt.uscg.mil).

TABLE 4.—CONSULTATION AREA COORDINATES FOR LAND STATIONS, SET 1 (1.7–30 MHz)

Command name	Location	Latitude	Longitude
COMMSTA Boston	Maspee, MA	41°24'00" N	70°18'57" W

TABLE 4.—CONSULTATION AREA COORDINATES FOR LAND STATIONS, SET 1 (1.7–30 MHz)—Continued

Command name	Location	Latitude	Longitude
Camslant	Chesapeake, VA	36°33'59" N	76°15'23" W
COMMSTA Miami	Miami, FL	25°36'58" N	80°23'04" W
COMMSTA New Orleans	Belle Chasse, IA	29°52'40" N	89°54'46" W
Campac	Pt. Reyes Sta, CA	38°06'00" N	122°55'48" W
COMMSTA Honolulu	Wahiawa, HI	21°31'08" N	157°59'28" W
COMMSTA Kodiak	Kodiak, AK	57°04'26" N	152°28'20" W
Guam	Finegayan, GU	13°53'08" N	144°50'20" E

Note: Systems of coordinates conform to NAD 83.

Point of contact: COTHEN Technical Support Center, COTHEN Program Manager, Tel: (800) 829-6336.

TABLE 5.—CONSULTATION AREA COORDINATES FOR LAND STATIONS, SET 2 (1.7–30 MHz)

Site name	Latitude	Longitude
Albuquerque, NM	35°05'02" N	105°34'23" W
Arecibo, PR	18°17'26" N	66°22'33" W
Atlanta, GA	32°33'06" N	84°23'35" W
Beaufort, SC	34°34'22" N	76°09'48" W
Cape Charles, VA	37°05'37" N	75°58'06" W
Cedar Rapids, IA	42°00'09" N	91°17'39" W
Denver, CO	39°15'45" N	103°34'23" W
Fort Myers, FL	81°31'20" N	26°20'01" W
Kansas City, MO	38°22'10" N	93°21'48" W
Las Vegas, NV	36°21'15" N	114°17'33" W
Lovelock, NV	40°03'07" N	118°18'56" W
Memphis, TN	34°21'57" N	90°02'43" W
Miami, FL	25°46'20" N	80°28'48" W
Morehead City, NC	34°34'50" N	78°13'59" W
Oklahoma City, OK	34°30'52" N	97°30'52" W
Orlando, FL	28°31'30" N	80°48'58" W
Reno, NV	38°31'12" N	119°14'37" W
Sarasota, FL	27°12'41" N	81°31'20" W
Wilmington, NC	34°29'24" N	78°04'31" W

Note: Systems of coordinates conform to NAD 83.

Point Of Contact: ROTH Deputy Program Manager, (540) 653-3624.

TABLE 6.—CONSULTATION AREA COORDINATES FOR RADAR RECEIVER STATIONS (1.7–30 MHz)

Latitude/Longitude
18°01' N/66°30' W
28°05' N/98°43' W
36°34' N/76°18' W

Note: Systems of coordinates conform to NAD 83.

[FR Doc. 05-246 Filed 1-6-05; 8:45 am] BILLING CODE 6712-01-P

**DEPARTMENT OF TRANSPORTATION**  
**Office of the Secretary of Transportation**

**49 CFR Part 15**

RIN 2105-AD33

**DEPARTMENT OF HOMELAND SECURITY**

**Transportation Security Administration**

**49 CFR Part 1520**

[Docket No. TSA-2003-15569; Amendment No. 1520-2]

RIN 1652-AA08

**Protection of Sensitive Security Information; Technical Amendment**

AGENCY: Office of the Secretary of Transportation (OST), Department of Transportation, and Transportation Security Administration (TSA), Department of Homeland Security.

**ACTION:** Technical amendment.

**SUMMARY:** OST and TSA are revising their regulations governing the protection of sensitive security information (SSI) to remove an unintended limitation on parties that have a need to know such information. Specifically, this rule removes the limiting words "aviation or maritime" from 49 CFR 15.11 and 49 CFR 1520.11 in order to clearly permit the sharing of vulnerability assessments and other documents properly designated as SSI with covered persons who meet the need to know requirements regardless of mode of transportation.

**DATES:** Effective January 7, 2005.

**FOR FURTHER INFORMATION CONTACT:** For questions on 49 CFR part 15: Astrid Lopez-Goldberg, Senior Attorney, Office of the Chief Counsel, Research and Special Programs Administration, Department of Transportation, Washington, DC 20590; e-mail: Astrid.Lopez-Goldberg@rspa.dot.gov, telephone: (202) 366-4400.