December 28, 2015

Via E-mail and U.S. Mail
bruce.jacobs@fcc.gov
rashmi.doshi@fcc.gov

Bruce Jacobs, Chief
Spectrum Enforcement Division
Enforcement Bureau
Federal Communications Commission
445-12th Street, S.W.
Washington, D.C. 20554

Dr. Rashmi Doshi, Chief
Laboratory Division
Office of Engineering and Technology
Federal Communications Commission
7435 Oakland Mills Rd
Columbia MD 21046-1609

Re: Complaint of Violation of Part 18 Marketing Regulations
By Lowe's Companies, Inc. with Respect to RF Lighting Devices.

Dear Mr. Jacobs and Dr. Doshi:

This office represents ARRL, the national association for Amateur Radio, formally known as the American Radio Relay League, Incorporated. The purpose of this letter and the attached evidentiary document entitled "*FCC Part 18 Marketing Violations by Lowe's Companies, Inc.*" (the Report) prepared by ARRL Laboratory Staff member Mike Gruber is to request on behalf of ARRL that the Commission investigate and commence an enforcement proceeding with respect to Lowe's marketing and retail sale of radio frequency (RF) lighting devices in the United States. ARRL purports to show that the hardware and home improvement chain is, in at least three stores located in California, Connecticut and Massachusetts (and by inference in other stores nationwide) marketing and selling to consumers (by retail sale) non-consumer, Part 18 RF lighting devices which are ***not*** intended for residential deployment, to consumers who have specifically noted their intention to deploy the devices in residential applications.

As is noted in the attached Report, there are within the Part 18 ISM rules [See Sections18.305(c) and 18.307(c)] two classes of Conducted and Radiated Emissions limits for RF lighting devices such as CFLs and Electronic Fluorescent Light Ballasts. One is for consumer equipment (defined at Section 18.107 as that category of ISM equipment which is used or intended to be used by the general public in a residential environment, notwithstanding its use in other areas). The other is for non-consumer equipment (which of necessity is intended for non-residential applications). These classes of limits are vastly different. For example, the conducted emission limits for Amateur Radio allocations below 30 megahertz are 22 dB different as between consumer and non-consumer applications. Section 18.213(d) states that "manufacturers of RF lighting devices must provide an advisory statement, either on the product packaging or with other user documentation, similar to the following: This product may cause interference to

radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45-30 MHz."

ARRL has received numerous complaints from amateur radio operators of significant noise in the Medium (MF) and High Frequency (HF) bands between 1.8 MHz and 30 MHz from "grow lights" and other Part 15 and Part 18 RF lighting devices. These devices are easily capable of emitting RF noise sufficient to preclude Amateur Radio MF and HF communications (and as well AM Broadcast station reception) throughout entire communities (and at distances of up to ½ mile from the device). ARRL has, as is noted in the attached Report, conducted studies in several states, including California, Massachusetts and Connecticut and has discovered an alarming number of instances of retail sale of electronic lighting ballasts, in which non-consumer-rated ballasts were mixed in with consumer ballasts and other consumer products and available for retail sale without guidance as to the proper deployment of them. Furthermore, the display signage in many cases did not mention or adequately address FCC Part 18 requirements as they pertain to interference in a residential environment. In most of the stores surveyed, unsuspecting consumers have no way of knowing the significance of consumer vs. non-consumer ballasts. In some cases, "commercial" grade ballasts, with their associated non-consumer emissions limits, appeared to be a merely heavier duty or longer lasting version of the same product. The display signage typically used implies, therefore, that commercial ballasts are also a product upgrade for home use. It typically does not include or mention the applicable FCC requirements.

Although Part 18 rules describe limits for consumer and non-consumer RF Lighting Devices, many ballasts are labeled only as either "Part 18A" or "18B". This nomenclature is clearly an adaptation from Part 15A and 15B, which pertains to commercial/industrial and residential digital devices, respectively. Part 18 does not include an A or B designation for RF lighting devices and the labelling is not at all helpful to consumers and, as used, has no regulatory connotation at all.

In the four cases of actual purchases of RF Lighting devices at retail from Lowe's stores, the purchasers specifically asked about residential deployment of non-consumer RF lighting ballasts. The device was actually purchased in each case cited. It is readily apparent that Lowe's (and, in ARRL's experience, other similar hardware retail sellers) are actively and knowingly engaged on a daily basis in selling non-consumer, commercial RF lighting products to Lowe's customers for residential deployment. If this activity is left unchecked, the Commission will continue to note a deterioration in ambient noise levels and preclusive interfering signals for both AM Broadcasters and Amateur Radio licensees in the entirety of the High Frequency bands.

ARRL respectfully requests that all non-consumer devices be removed from retail sale and marketing at Lowe's. Those non-consumer devices that have been sold to consumers should be tracked and recalled.

Given the foregoing, on behalf of the more than 730,000 licensed radio amateurs in the United States who have a significant interest in avoiding interference in residential environments from RF lighting devices which were never intended to be deployed in a residential environment, ARRL respectfully requests that your offices take the appropriate action with respect to Lowe's and other similar chains of retail sales of these devices without delay.

Should any additional information be called for, please contact the undersigned, General Counsel for ARRL, the national association for Amateur Radio. Thank you very much for your consideration of this request.

Sincerely,

Christopher D. Imlay
General Counsel, ARRL

Attachment

Copy to: Lowe's Companies, Inc., 1000 Lowe's Boulevard, Mooresville, NC 28117 (Attention: Ross W. McCanless, Esquire, Executive Vice President, General Counsel, Secretary and Chief Compliance Officer)

FCC Part 18 Marketing Violations by Lowe's Companies, Inc.

By Mike Gruber, W1MG, ARRL Laboratory

September 8, 2015

Introduction

Non-electronic ballasts, which once dominated the fluorescent light market, operated under Part 15 as incidental radiators. Today they have been phased out in favor of newer electronic ballasts which, along with CFL bulbs, operate under Part 18 as "RF Lighting Devices." In this case, the FCC considers these devices to be converting RF energy above 9 kHz directly into light, i.e., another form of energy. For this reason, the Commission classifies an electronic ballast as an ISM device.

Recent surveys conducted by ARRL, the national association for Amateur Radio in several states, including California, Illinois, Massachusetts and Connecticut indicate that most electrical and lighting retail outlets are now primarily or exclusively stocking and selling electronic ballasts. In fact, it should be noted that non-electronic ballasts are no longer being sold by several "big box stores" that we surveyed. Presumably this is a nationwide phenomenon being driven in part by government mandate.

Part 18 Limits for RF Lighting Devices

As shown by Appendix A, Part 18 has two sets of limits for RF Lighting Devices: one limit for consumer devices, and one for non-consumer devices. The emissions limits are *considerably lower for consumer rated devices*. As an example, the conducted emissions limits for operation within all present Amateur Radio allocations below 30 MHz are 22 dB less for consumer-rated devices than for non-consumer-rated devices. It should also be noted that consumer-rated devices are the only RF lighting devices that should be used for a home or residential applications. Per § 18.107 (g), consumer ISM equipment is defined as that which is to be "*used or intended to be used by the general public in a residential environment, notwithstanding use in other areas.*"

Although non-consumer devices might be suitable for commercial and industrial environments, ARRL is now receiving a significant number of reports of actual cases in which commercial devices are being operated in and which are causing harmful interference to licensed Amateur Radio operation in residential areas.

Illegal Marketing by Lowe's of Part 18 RF Lighting Devices

The previously mentioned multi-state survey of fluorescent light ballasts showed an alarming number of non-consumer rated ballasts mixed in or on display adjacent to consumer products. Furthermore, the display signage in every store that we surveyed did not adequately address or mention FCC Part 18 requirements as they pertain to interference in a residential environment. Unsuspecting consumers have no way of knowing the significance of consumer vs. non-consumer ballasts. It is apparent that most consumers assume the "commercial" grade ballasts, with their associated non-consumer emissions limits, would be a heavier duty or superior product. The display signage implies, therefore, that commercial ballasts might be a product upgrade for home use. In no case did the signage include or mention the applicable FCC requirements or

any limitations on deployment of the devices.

Although Part 18 only describes limits for consumer and non-consumer RF Lighting Devices, many ballasts are labeled only as either Part 18A or 18B without explanation. This nomenclature is clearly an adaptation from Part 15A and 15B, which pertains to commercial/industrial and residential digital devices, respectively. Part 18 does not include an A or B designation for RF lighting devices and so the labeling is (i) undefined and unexplained, and (ii) meaningless from a regulatory standpoint.

See Appendix B for pertinent definitions and rules in Part 18, particularly with regard to the marketing and sale of non-consumer devices to consumers. Additional information in Appendix C is taken from Part 2 of the FCC rules. Appendix D is for reference purposes only. It contains some of the equivalent rules with regard to Part 15A (non-consumer) and Part 15B (consumer) digital devices.

Sale of Non-Consumer RF Lighting Devices for Residential Purposes

The following four cases highlight the marketing and sale of commercial light fixtures and ballasts by Lowe's to residential users. A non-consumer or "commercial" product was actually purchased in each case after consulting with a sales associate. Specifically, the sales associate was asked about the use of a commercial Part 18 non-consumer rated ballast in a residential environment.

Case 1 (Florescent Light Ballast)

On August 19, 2015, Ms. Deborah Roy purchased a non-consumer rated OSRAM QTP 2x32T8/UNV ISN-SC (50994) ballast from a Lowe's located at the following address:

Lowe's Store #0660 / E. Springfield, MA
1600 Boston Road
Springfield, MA 01129
Tel: (413) 543-0601

Before selecting the ballast, Ms. Roy reports that she asked the sales associate for assistance. She pointed out that it was labelled as a commercial device and asked if she could use it in the basement of her home. The Lowe's associate responded, "Sure – yes – no problem. It's okay for use in a home." Ms. Roy then thanked him and paid for this device using her Visa Card at the store's check out. Again, this non-consumer item was in not flagged during check-out. After paying for it, she simply walked out of the store with it. See Figure 1.1 for photo of ballasts on display.

Figure 1.1 - Ballasts on display. Commercial ballasts with orange stripe are on the left. Residential ballasts with blue labelling are on right.

As can be seen in Figure 1.1, the consumer and non-consumer ballasts in this store were in a somewhat apparent order. Non-consumer ballasts were on the left. Consumer ballasts were on the same shelf and to the right of the non-consumer ballasts. The ballasts were adjacent to each other and differentiated by a color scheme. Packaging with blue labels with white lettering were for residential environments. An orange stripe on the box indicated a commercial device. (A quick survey of several samples showed the ratio to be about 50/50.) Although this color scheme made it easy to tell commercial from residential ballasts, it wasn't clear why a consumer would select one over the other. In fact, the commercial rating to most consumers might suggest a heavier duty or better quality product. See Figure 1.2 for photo of store display.

The particular ballast purchased by Ms. Roy was mixed in with non-consumer "commercial" ballasts. Although consumer ballasts are labeled for residential use only, there is no equivalent statement anywhere on the device packaging or store display. While the box label does include a statement "Complies with FCC 47 CFR Part 18, Non-Consumer No PCBs" it is in small print. Furthermore, unsuspecting consumers have no way of knowing what this means. There is no mention – anywhere – of radio interference or a warning against using it in a home environment.

Once home, Ms. Roy opened the box and was also surprised that there was no instruction sheet or documentation inside. There is only a statement printed on the ballast, which is identical to the one on the box, "Complies with FCC 47 CFR Part 18, Non-Consumer No PCBs." However, this does not comply with FCC rule § 18.213, particularly paragraph (d), which reads as follows:

"(d) Manufacturers of RF lighting devices must provide an advisory statement, either on the product packaging or with other user documentation, similar to the following: This product may cause interference to radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45-30 MHz. Variations of this language are permitted provided all the points of the statement are addressed and may be presented in any legible font or text style

The ballasts in this particular store were all packaged in a box. It is, therefore, not known which, if any, ballasts came with an instruction sheet or had the proper FCC advisory statement required by § 18.213 (d). It should also be noted that the labeling provided is effectively

meaningless to most of the customers that purchase these devices. The typical consumer would not know the significance of the non-standard references to the Part 18A and Part 18B ratings.

Figure 1.2 – The store display. The ballasts are on a shelf above the fixtures. The store signage on the right provides information on how to choose a ballast but makes no mention of the FCC rules, Part 18, or the potential to cause radio interference.

Figure 1.3 – Close-up of the signage pertaining to ballast selection. Although it mentions the difference between residential and commercial ballasts, the difference appears to be based only on voltage. It makes no mention of FCC Part 18 rules or the potential for radio interference. The consumer would have no way of knowing that a commercial device should not be used in a residential environment.

The store display is shown in Figure 1.2. There is no indication of Part 18 FCC requirements. Figure 1.3 also shows a close-up of the display signage pertaining to the selection of ballasts. Although it tells customers to select commercial and residential ballasts accordingly, it does not

specifically tell them not to use a commercial ballast in a home. Consumer ballasts, on the other hand, are clearly labeled for residential use only. The customer is left with the impression that the commercial ballast is a superior or heavier duty product. A relatively small info sheet attached to the display provided a cross reference of magnetic ballasts to the newer electronic ballasts. See Figure 1.4.

Figure 1.4 – This info sheet provides a cross reference for electronic ballasts when replacing older magnetic ballasts. It does not provide any information on the FCC rules pertaining to Part 18.

Although the display had instructions on ballast selection, they did not specifically address the FCC rules nor prohibit the use of non-consumer ballasts in a residential environment. The store's display instructions on how to select between consumer and non-consumer ballasts are inadequate. As previously shown in Figure 1.3, the instructions only reference voltage requirements. Since 120 vac is typically available in both commercial and residential environments, the consumer in this case might logically conclude that the commercial ballast could be used in a home or residential environment.

The photo in Figures 1.5 shows the ballast that was ultimately purchased by Ms. Roy at this store. The photos in Figures 1.5 and 1.6 show the only references that she had concerning Part 18 rules and requirements.

Figure 1.5 – This is the non-consumer ballast purchased by Ms. Roy at the Lowe's store in E. Springfield, MA.

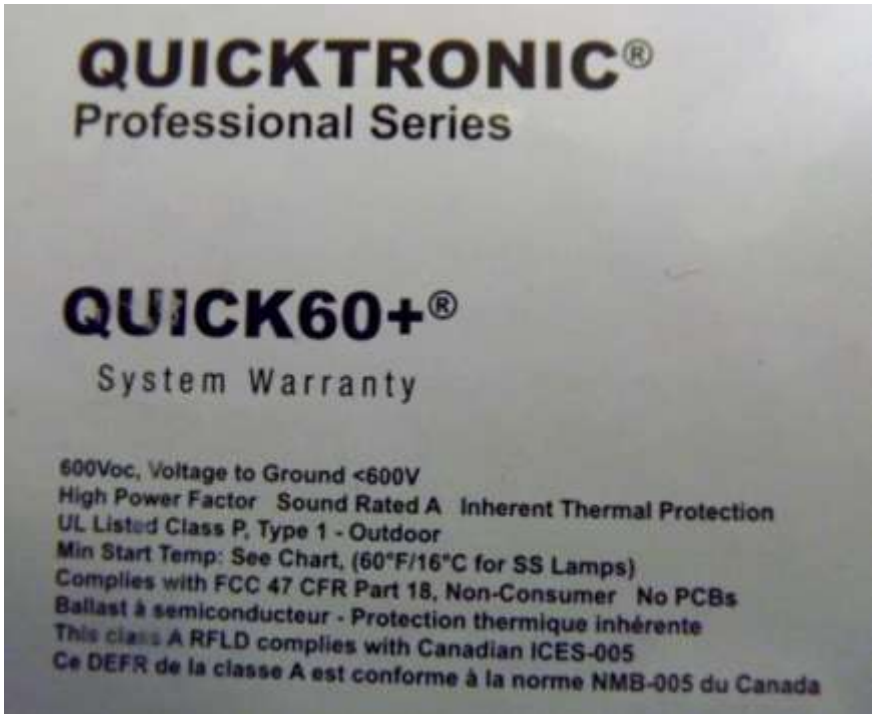

Figure 1.6 – This is the only reference to Part 18 on the Packaging and visible at the time of purchase. Ms. Roy had no way of knowing that this device should not be used in her home. When she asked a Lowe's associate, the advice he provided was incorrect.

Figure 1.7 – When Ms. Roy opened the box at home, there was no information for the user as required by Part 18. In fact, there was no additional instruction sheet or documentation. The only reference to Part 18 inside the box was on the device itself and shown in this photo.

Conclusion

Lowe's is not only selling and marketing commercial devices to consumers, their sales staff is not knowledgeable enough to properly advise its customers about FCC regulatory requirements for deployment of the products. In addition to this marketing violation by Lowe's, a second Part 18 violation is also noted. Specifically, the manufacturer (OSRAM Sylvania, Inc.) failed to include the advisory statement required by § 18.213 (d) with the device purchased by Ms. Roy, and Lowe's either knew or should have known that such is a violation of FCC rules governing marketing and sale of RF devices.

Case 2 (Lighting Fixtures)

Mr. Jerry Ramie arrived at the Lowe's Home Improvement store on 775 Ridder Park Drive in San Jose, CA 95131 a little before 1:00PM on August 17, 2015. The fluorescent lighting section was a mixture of ballasts and fixtures, both residential and commercial intermingled.

Figure 2.1, at right, shows the right side of the lighting display at this store.

Ballasts are at the top of the display, with a mixture of residential and commercial fixtures below them. The "Universal Volt" reference is the only signage that differentiates commercial-grade from residential products, as can be seen on the top-right of the display. These voltage tags are also imprinted along the sides of the boxes shown below the sign.

Commercial and residential lighting fixtures are also on the same shelf and adjacent to each other. Two blue Metatech commercial fixtures are pulled out at bottom-right. The red Utilitec residential fixtures are at the lower-left in the photo.

Figure 2.1 - Right side of lighting display at Lowe's on Ridder Park Drive in San Jose, California. Commercial and consumer devices are mixed and intermingled. See text at left of photo for detailed description.

The top-left area of the signage below shown in Figure 2.2 shows some of the commercial and

residential ballasts offered. The sign indicates that "Wrap Lights" in this section are "Best in utility settings such as laundry areas, closets & more."

Figure 2.2 – Left side of store signage.

Also in Figure 2.2, the orange-striped ballasts are all commercial grade and the third-from-right box (pulled forward obscuring the price) holds the Osram (Sylvania) 50994 commercial T8 ballasts. Two stacks to the right of them are the blue GE residential T8 ballasts. (Also obscuring the price tag) The commercial ballasts cost more than the residential ballasts. There is no other differentiation shown regarding residential or commercial products.

The left side of the display is shown in Figure 2.3. Additional ballasts and starters are displayed at the top, with residential and commercial fixtures intermingled below them.

Note the green 4' long T8 fixtures pulled out at bottom right. These are Cooper commercial fixtures on sale for $47.98. The Utilitec consumer T8 fixture is at lower-left and is not sale priced at $54.98.

About this time, a Lowe's associate from the electrical department asked if Mr. Ramie needed help. Mr. Ramie inquired as to which T8 fixture was appropriate for his garage at home. The Lowe's associate immediately recommended the Cooper commercial fixture that was on sale. Mr. Ramie asked him what the difference was. The associate told Mr. Ramie that if he bought the Cooper he could "put it up once and it'll last forever. Cooper is the best quality." Mr. Ramie thanked him for his advice and purchased the Cooper commercial fixture for his residential garage.

Figure 2.3 – Left side of display. See text at right of photo for detailed description.

Details of the product recommended by the Lowes associate are shown below in Figure 2.4. The middle photo in Figure 2.4B indicates compliance with Part 18 EMI/RFI regulations. "Meets FCC Part 18 (Class A) for EMI and RFI – Non-consumer limits"

Figure 2.4A – Back view.

Figure 2.4B – Front view.

Figure 2.4C – End view with sales receipt.

Conclusion:

The display mixed Commercial and Residential products together and there were no signs indicating what the differences might be. The advice given to Mr. Ramie by the staff was not correct. It led to the purchase of the wrong product which may cause interference when used at home.

Case 3 (Ballasts)

Mr. Jerry Ramie arrived at the Lowe's Home Improvement Store at 750 Newhall Drive in San Jose, CA 95110 a little after 1:00PM on August 17, 2015. He wanted to look at ballasts for lighting two T8-F32 tubes and found the display shown in Figure 3.1.

Figure 3.1 – Fluorescent light ballasts on display at Lowe's on Newhall Drive in San Jose.

As in the other Lowe's, the display intermingled residential and commercial ballasts and fixtures. The orange striped box at the left holds Osram (Sylvania) 50994 commercial T8 ballasts for powering two 4' T8 tubes at 32W each (F32) from 120-277VAC. The blue GE residential ballast at right powers the same compliment of tubes from 120VAC mains only for $15.97 each.

Figure 3.2 – This is the commercial ballast incorrectly recommended by a Lowe's associate for residential lighting purposes.

When a Lowe's lighting associate came by, Mr. Ramie told him that he wanted to replace the

ballast in his home garage with a new one for powering two 4' F32 tubes. Mr. Ramie pointed out the two ballasts in the photo shown in Figure 3.1 and asked him what the difference was. The associate told Mr. Ramie that the commercial ballast shown in Figure 3.2 offered "faster turn-on in cold weather." Mr. Ramie then asked if that was the only difference between the two. The associate told him that the commercial voltage range was wider and that "there aren't any other differences."

Mr. Ramie thanked him and told him that he liked the idea of the lights coming on quickly in his home garage. Mr. Ramie mentioned that the price of the GE residential ballast was half that of the commercial ballast, but he told the associate that he wanted "the best." The associate agreed that the commercial ballast was "better" and Mr. Ramie purchased it for his home garage.

Details of this ballast are shown below in Figures 3.3 and 3.4.

Figure 3.3 – Upon the recommendation of a Lowe's lighting associate, Mr. Ramie purchased this commercial "FCC Part 18 non-consumer" ballast for residential purposes. Under the FCC rules, however, this device should not be used in a home environment. It is intended only for commercial and industrial environments. The box labelling indicates in small print, "Complies with FCC 47 CFR Part 18, Non-Consumer No PCBs."

Figure 3.4 – Inside the box. FCC rule § 18.213 (d) requires manufacturers of RF lighting devices to include an advisory statement on product packaging or in documentation. This statement describes and addresses the device potential to cause radio interference. Although small print on the ballast indicates, "Complies with FCC 47 CFR Part 18, Non-Consumer No PCBs," the required advisory statement was not included on the product packaging. There was no documentation included with the device in the box. This is a labelling violation on the part of the manufacturer.

Conclusion:

The sales representatives at both Lowe's locations did not understand the differences between commercial and residential fluorescent lighting. They both implied that additional features and quality advantages were available by using commercial lighting equipment in a residential setting. The displays were confusing and did not provide any information as to how a consumer might choose between residential and commercial ballasts and fixtures or what the differences might be.

The only way to stop such incorrect information coming from a sales person is with correct and complete information in the signage. If the sign gives useful information on the interference potential of commercial lighting equipment when used in residential settings, then the sales representatives and their customers may actually read it and purchase only residential rated devices for residential installations.

Another violation by the manufacturer involves § 18.213 (d). This rule requires information to the user "be provided to the user in the instruction manual or on the packaging if an instruction manual is not provided for any type of ISM equipment." The advisory statement required by the rule was previously quoted in Case 1. It was not included with the packaging or product documentation. See Appendix B for complete text of § 18.213.

Case 4 (Fluorescent Light Ballast)

On September 1, 2015, Ms. Lori Kosior purchased a non-consumer rated OSRAM QTP 2x32T8/UNV ISN-SC (50994) ballast from a Lowe's located at the following address:

Lowe's Store #0623 / Newington, CT
3270 Berlin Turnpike
Newington, CT 06111, Store #0623
Phone: (860) 667-7003

Before purchasing the ballast, Ms. Kosior reports that she asked the appropriate Lowe's associate for assistance. She indicated that she was buying the commercial ballast for her husband, who was attempting to use it in the basement of their home, clearly a residential application. The Lowe's associate asked some questions pertaining to the number and type of bulbs in the fixture. Ms. Kosior responded that she thought she had the right ballast in that regard, but wanted to know if it okay to use a commercial device in her home. The associate responded, "All that commercial means is that it can be used for 120 standard volts, or as high as 277 volts, as listed on the package."

The associate did not know and gave no indication that this commercial ballast should not be used in a home environment. Ms. Kosior then paid cash for this device at the store's check out. Again, this non-consumer item was not flagged during check-out. After paying for it, she simply walked out of the store with it.

As can be seen in Figure 4.1, the consumer and non-consumer ballasts in this store were in a somewhat apparent order. Non-consumer ballasts were on the left. Consumer ballasts were on the same shelf and to the right of the non-consumer ballasts. This is similar to other Lowe's stores that we investigated. The ballasts were adjacent to each other and differentiated by a color scheme.

Figure 4.1 – Consumer and non-consumer ballasts on display at the Lowe's store in Newington, CT. This is similar to the other Lowe's stores in this report.

The information provided by Lowe's to its customers is clearly inadequate to properly advise them with regard to Part 18 rules. This is similar to the other Lowe's stores in this report. There is no clear reference to FCC Part 18 requirements when selecting a ballast, and the package labeling only references compliance with Part 18A, which would be meaningless to most consumers and Lowe's customers.

Figure 4.2 – The information provided by Lowe's at this Connecticut store is essentially the same as at other Lowe's stores that we investigated. Refer to Figures 1.3 and 1.4 for similar signage and info sheet that we found at the Massachusetts store in E. Springfield.

Finally, after receiving incorrect advice from the Lowe's associate, Ms. Kosior purchased the non-consumer ballast shown in Figure 4.3.

Figure 4.3 – The ballast purchased by Ms. Kosior at the Newington, CT store. This purchase was the result of the store's improper marketing and incorrect advice from a Lowe's associate. The only reference to Part 18 at the time of purchase is a reference to Part 18A compliance on the box.

Conclusion

The improper sale and marketing of Part 18 non-consumer devices to consumers at this location is similar to the other Lowe's stores detailed in this report. Furthermore, their sales staff is not knowledgeable enough to properly advise its customers. In addition to this marketing violation by Lowe's, the product purchased by Ms. Kosior also included a second Part 18 violation. Specifically, the manufacturer (OSRAM Sylvania, Inc.) failed to include the advisory statement required by § 18.213 (d) with the device that she purchased.

Final Conclusion & Recommendations

Clearly Lowe's marketing and sale of non-consumer ballasts is not adequate to ensure compliance with FCC Part 18 requirements. This was demonstrated by the four cases described in this report, including the purchase of non-consumer ballasts after clearly telling store personnel that the product was intended for residential purposes. This appears to be a widespread problem in Lowe's stores throughout the United States, including California, Connecticut and Massachusetts. It is therefore recommended that an enforcement proceeding against Lowe's be commenced by the FCC for the illegal and misleading marketing of Part 18 non-consumer lighting devices.

Specific marketing recommendations include:

1) Non-consumer (Commercial) and consumer (Residential) products should be marketed from two different locations, with a clear line of separation between them.
2) Improved display signage clearly stating that commercial devices should not be used in a residential environments. Reference should be made to FCC Part 18 rules and the increased potential for commercial devices to cause radio interference.
3) Purchasers of commercial devices must provide a valid contractor's number at the time of purchase.

An additional FCC rule violation is also noted. Specifically, Osram Sylvania failed to include the advisory statement required by § 18.213 (d) of the Commission's Rules. See Appendix B for the entire text of § 18.213, including paragraph (d). It is therefore recommended that Osram Sylvania also be sanctioned by the Commission for repeated and willful failure to comply with § 18.213 (d).

List of Appendices

1) Appendix A - Part 18 Emissions limits for RF Lighting Devices (Including Electronic Fluorescent Light Ballasts)
2) Appendix B - Part 18 - Pertinent Definitions and Rules
3) Appendix C - Part 2 - Pertinent Definitions and Rules
4) Appendix D - Part 15 - Pertinent Definitions and Rules

Appendix A

Part 18 Emissions limits for RF Lighting Devices (Including Electronic Fluorescent Light Ballasts)

Table 1A - Part 18 Conducted Emissions Limits (For RF Lighting Devices, such as CFLs and Electronic Fluorescent Light Ballasts)

Frequency (MHz)	Maximum RF line voltage measured with a 50 uH/50 ohm LISN (uV)	Conducted limit (dBµV)
Consumer equipment:		
0.45 to 2.51	250	48
2.51 to 3.0	3,000	70
3.0 to 30	250	48
Non-consumer equipment:		
0.45 to 1.6	1,000	60
1.6 to 30	3,000	70

(d) If testing with a quasi-peak detector demonstrates that the equipment complies with the average

Table 1B - Part 18 Radiated Emissions Limits for RF lighting devices

Frequency (MHz)	Field strength limit at 30 meters (µV/m)
Non-consumer equipment:	
30-88	30
88-216	50
216-1000	70
Consumer equipment:	
30-88	10
88-216	15
216-1000	20

Appendix B

Part 18 - Pertinent Definitions and Rules

§ 18.107 Definitions.

(a) *Radio frequency (RF) energy.* Electromagnetic energy at any frequency in the radio spectrum from 9 kHz to 3 THz (3,000 GHz).

(b) *Harmful interference.* Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with this chapter.

(c) *Industrial, scientific, and medical (ISM) equipment.* Equipment or appliances designed to generate and use locally RF energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunication. Typical ISM applications are the production of physical, biological, or chemical effects such as heating, ionization of gases, mechanical vibrations, hair removal and acceleration of charged particles.

(g) *Consumer ISM equipment.* A category of ISM equipment used or intended to be used by the general public in a residential environment, notwithstanding use in other areas. Examples are domestic microwave ovens, jewelry cleaners for home use, ultrasonic humidifiers.

(i) *Marketing.* As used in this part, marketing shall include sale or lease, offer for sale or lease, advertising for sale or lease, the import or shipment or other distribution for the purpose of sale or lease or offer for sale or lease. See subpart I of part 2 of this chapter.

NOTE: In the foregoing, sale (or lease) shall mean sale (or lease) to the user or a vendor who in turn sells (or leases) to the user. Sale shall not be construed to apply to devices sold to a second party for manufacture or fabrication into a device which is subsequently sold (or leased) to the user.

§ 18.203 Equipment authorization.

(a)) Consumer ISM equipment, unless otherwise specified, must be authorized under either the Declaration of Conformity or certification procedure prior to use or marketing. An application for certification shall be filed with the Commission on an FCC Form 731, pursuant to the relevant sections in part 2, subpart J of this chapter and shall also be accompanied by:

(1) A description of measurement facilities pursuant to § 2.948, or reference to such information already on file with the Commission.

(2) A technical report pursuant to §§ 18.207 and 18.311.

(b) Consumer ultrasonic equipment generating less than 500 watts and operating below 90 kHz, and non-consumer ISM equipment shall be subject to verification, in accordance with the relevant sections of part 2, subpart J of this chapter.

§ 18.213 Information to the user.

Information on the following matters shall be provided to the user in the instruction manual or on the packaging if an instruction manual is not provided for any type of ISM equipment:

(a) The interference potential of the device or system

(b) Maintenance of the system

(c)) Simple measures that can be taken by the user to correct interference.

(d) Manufacturers of RF lighting devices must provide an advisory statement, either on the product packaging or with other user documentation, similar to the following: This product may cause interference to radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45-30 MHz. Variations of this language are permitted provided all the points of the statement are addressed and may be presented in any legible font or text style.

Appendix C

Part 2 - Pertinent Definitions and Rules

§ 2.1 Terms and definitions.

Interference. The effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radiocommunication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy. (RR)

§ 2.801 Radiofrequency device defined.

As used in this part, a radiofrequency device is any device which in its operation is capable of emitting radiofrequency energy by radiation, conduction, or other means. Radiofrequency devices include, but are not limited to:

(c) The industrial, scientific, and medical equipment described in part 18 of this chapter.

(d) Any part or component thereof which in use emits radiofrequency energy by radiation, conduction, or other means.

§ 2.909 Responsible party.

The following parties are responsible for the compliance of radio frequency equipment with the applicable standards:

(a) In the case of equipment which requires the issuance by the Commission of a grant of equipment authorization, the party to whom that grant of authorization is issued (the grantee) If the radio frequency equipment is modified by any party other than the grantee and that party is not working under the authorization of the grantee pursuant to § 2.929(b), the party performing the modification is responsible for compliance of the product with the applicable administrative and technical provisions in this chapter.

(b) In the case of equipment subject to authorization under the verification procedure, the manufacturer or, in the case of imported equipment, the importer. If subsequent to manufacture and importation, the radio frequency equipment is modified by any party not working under the authority of the responsible party, the party performing the modification becomes the new responsible party.

(c) In the case of equipment subject to authorization under the Declaration of Conformity procedure:

(1) The manufacturer or, if the equipment is assembled from individual component parts and the resulting system is subject to authorization under a Declaration of Conformity, the assembler.

(2) If the equipment, by itself, is subject to a Declaration of Conformity and that equipment is imported, the importer.

(3) Retailers or original equipment manufacturers may enter into an agreement with the responsible party designated in paragraph (c)(1) or (c)(2) of this section to assume the responsibilities to ensure compliance of equipment and become the new responsible party.

(4) If the radio frequency equipment is modified by any party not working under the authority of the responsible party, the party performing the modifications, if located within the U.S., or the importer, if the equipment is imported subsequent to the modifications, becomes the new responsible party.

(d) If, because of modifications performed subsequent to authorization, a new party becomes responsible for ensuring that a product complies with the technical standards and the new party does not obtain a new equipment authorization, the equipment shall be labelled, following the specifications in § 2.925(d), with the following: "This product has been modified by [insert name, address and telephone number of the party performing the modifications]."

[54 FR 17712, Apr. 25, 1989, as amended at 61 FR 31045, June 19, 1996; 62 FR 10470, Mar. 7, 1997; 62 FR 41880, Aug. 4, 1997]

Appendix D

Part 15 - Pertinent Definitions and Rules

§ 15.105 Information to the user.

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

(c) The provisions of paragraphs (a) and (b) of this section do not apply to digital devices exempted from the technical standards under the provisions of § 15.103.

(d) For systems incorporating several digital devices, the statement shown in paragraph (a) or (b) of this section needs to be contained only in the instruction manual for the main control unit.

(e) In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

[54 FR 17714, Apr. 25, 1989, as amended at 68 FR 68546, Dec. 9, 2003]