with non-filament type replaceable light sources shall be produced by all four headlamps, designed to conform to the upper beam requirements of Figure 15A.

This paragraph would limit how HID light source headlamps could be used in a system with non-HID replaceable light source types in the same way as Ford's suggested revisions to S7.5(e)(3)(ii). For this reason, NHTSA disagrees with this suggestion.

In addition, Ford's suggested paragraph would permit the use of a headlamp whose performance is not specified by Standard No. 108. This could occur because Ford would require that the "upper beam" be produced by all four headlamps and that the "beam" (not the headlamp) be designed to conform to the requirements of Figure 15A. Requiring the "beam" from all four headlamps to meet the photometric requirements of Figure 15A is quite different from the current requirement that the upper beam headlamp system independently meet Figure 15A. Because Ford's suggestion does not specify the apportionment of photometry between the headlamps necessary to produce the "beam", it would appear to restrict the replacement market to original equipment manufacturers, as well as potentially allowing replacement headlamps with inadequate illumination or disabling glare. Hence, NHTSA is not proposing Ford's suggested paragraph.

Paragraph S7.7(g). This paragraph requires replaceable light sources to be designed to conform to the information on file in part 564. Ford would modify the phrase "replaceable light source" by adding after it "in conjunction with its ballast, if any is specified in part 564 for its operation." NHTSA does not believe that an amendment is required. The ballast information will be part of the information on file in part 564 and no specific reference to it is needed.

Paragraph S7.7(h). This paragraph requires marking of replaceable light sources in specified ways. Ford would add eight specific requirements for ballast marking: name or logo of the ballast manufacturer, the ballast part number or other unique identifier, the part number or other unique identification of the non-filament type light source for which the ballast is designed, identification of the designated Part 564 discharge sources that the ballast is designed to power, and the rated laboratory life of the ballast/discharge bulb combination for each bulb so identified, shock hazard warning (see discussion below), watts and voltage information, the date of manufacture, and the DOT symbol.

NHTSA agrees with this suggestion, but is proposing a new section S7.7(l) for ballast alone. With one exception, it is consistent with the existing requirement for replaceable light sources. That exception is the identification and documentation of rated laboratory life. With respect to other replaceable light sources, NHTSA has previously decided that requiring this information is an unjustifiable and unnecessary burden. However, the advent of HID technology has caused NHTSA to rethink this issue as it relates to Ford's suggestion for reasons to be explained below in the discussion of proposed amendments to part 564.

Paragraph S7.7(i). This paragraph relates to seasoning of the filament of a replaceable light source before measurement of maximum power and luminous flux. Consistent with its earlier recommendations, Ford would add "filament type" before "replaceable light source." Since the seasoning procedures are different for filament type and arc type light sources, NHTSA agrees that there is a distinction. However, because of the definition of filament that has been proposed, NHTSA is proposing to revise S7.7(i) to apply to the seasoning of "a replaceable light source" rather than to "the filament." This would be followed by two new subparagraphs, S7.7(i)(1), which would apply to light sources with resistive element type filaments, and S7.7(i)(2), which would apply to light sources using excited gas mixtures as filaments. This also accords with recommendations made by Ford. As for seasoning of light sources using "other energy conversion sources", NHTSA solicits comments on what these sources might be and the procedure that would be appropriate for their seasoning. Comments should also address an alternative to S7.7.(i) for "other energy conversion sources" of including seasoning information as an item of information in appendix B.

The reader should note that, under NHTSA's published proposal to transfer HB type light sources to part 564 (60 FR 14247, March 16, 1995), paragraph S7.7(i) would become paragraph S7.7(b), with no substantive change in it. For the same reason, proposed new paragraph S7.7(l) would be adopted as paragraph S7.7(d).

S8 Tests and Procedures for Integral Beam and Replaceable Bulb Headlighting Systems. Ford would add "Ballasts required to operate nonfilament type light sources shall be included in the tests specified" in S8. NHTSA concurs but, in its proposal, has substituted "specific gas mixture" for "non-filament type." Other Issues Associated with Short Arc Discharge Lighting Systems. Two other issues associated with HID headlamp light source use are electrical shock resulting from contact with the high voltages used to energize the light source, and potential health hazards resulting from ultraviolet (UV) radiation.

Severe electrical shock is a potential hazard because of the high voltage generated by the HID system ballast. A voltage that is higher than that which is normally produced by the motor vehicle's standard battery is necessary to operate an HID system. NHTSA believes that manufacturers will design appropriate levels of safety into their HID systems because of competitive market pressures and product liability concerns. For this reason, the only regulatory requirement that NHTSA is proposing that addresses this issue is the marking of the ballast with an appropriate warning.

Because HID light sources produce UV energy, there is the potential for damage to ocular tissues and skin from radiation in the spectral region between 200 and 400 nm. Exposure could arise from a defect in the system or as a result of a crash and damage to it. Exposure could also occur in the course of headlamp repair. At the present time, it appears likely that the plastic lenses on HID headlamps will filter UV energy, that they will be given a protective coating that will minimize UV emission during normal operation, or that UV filters integral to the HID light source envelope will be used. Thus, there appears no need to regulate. However, NHTSA intends to monitor the issue and will propose rulemaking if it appears required for health and safety.

Proposed Amendments to Part 564

General. Ford would replace all references to "filament" with "filament or discharge arc." However, this is unnecessary. If NHTSA adopts the definition of "filament" that has been proposed to be added to Standard No. 108, it will apply to part 564 under § 564.4 which incorporates definitions used in other regulations.

Section IX of appendix A. Ford would add the word "Identification" to the text. NHTSA concurs. If a ballast is required for operation, Section IX would also require a manufacturer to provide a complete listing of the requirements and parameters between the light source and ballast, and ballast and the vehicle.

Proposed appendix B. The purpose of Appendix A of part 564 is to ensure that aftermarket replaceable light sources are interchangeable with their original equipment counterparts so that they