

**Summary of Differences Between NES Model Versions v\_4.1 and v\_4.2**  
**Barbara Atkinson**  
**27 March 2000**

*NES v\_4.1*

This version was used to model Scenarios 1 through 6 presented in the TSD, Chapter 5. Version 4.1 was e-mailed to NEMA in advance of the October 1999 negotiation. It is documented in Appendix B, section B.2, of the TSD.

*NES v\_4.2*

This version was used to model Scenario 7 as reported in the TSD. The changes, described in Appendix E, adapt the model for the consensus standards as follows:

The consensus standards dates for ballasts in the two market segments are reflected in the defaults in **Year to Start Standard** and **Weights**. The start year is 2005 (new/renovation market) and the delay period is 5 years (replacement market). For the new/renovation market, 100% of the ballasts converted to electronic rapid start are assumed to be T8 ballasts, and for the replacement market, 95% of the converted ballasts are T8 ballasts and 5% are T12 ballasts.

A third shipments scenario, **Constant Shipments**, has been added to the model. Constant Shipments assumes that magnetic ballast shipments are essentially constant throughout the analysis period (see Appendix E for details).

As explained in Appendix E, the consensus standards BEF levels for 2F96T12HO ballasts remain the same as those in the 1988 standards, which allow magnetic ballasts for this ballast class. However, the exemption to the previous standards for cold temperature HO ballasts will be removed for most of these ballasts under the new standards. These ballasts are currently standard magnetic ballasts, and to meet the BEF levels it is assumed they will become energy-efficient magnetic (EEM) ballasts.

Therefore, under the consensus standards there is no change from the base case for the ballasts that were previously included in this class in NES v\_4.1. However, there is a shift from standard magnetic ballasts in the base case to EEM ballasts in the consensus standards case. To reflect these changes, the model v\_4.2 has been adapted so that the 2F96T12HO shipments include only the cold temperature ballasts, which are assumed in the base case to be 1 million ballasts from 1997 - 2030. The kWh savings and incremental prices for 2F96HO ballasts represent standard ballasts in the base case and EEM ballasts in the standards case (12 W savings and \$11.77 incremental price). Operating hours are

assumed to be 4500 hours.<sup>1</sup> All of the HO ballasts are assumed to be affected in 2005, with no delay period for this ballast class.

This model version can also be used to model other scenarios for Electronic or Cathode Cutout standards. Note that the 2F96HO ballast results would follow the assumptions of the consensus standards described above.

---

<sup>1</sup>Assumptions for 2F96HO cold temperature ballast shipments, wattage savings, ballast price for standard magnetic ballasts, and operating hours, were provided by NEMA, 11/99.