

**STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC ENGINEERING**

Concerning the Proposed) STATEMENT OF NEED
Adoption of Rules of the) AND REASONABLENESS
State Department of Transportation)
Relating to Minimum Energy)
Efficiency Standards for Street,)
Highway and Parking Lot Lighting)

The Commissioner of Transportation (Commissioner) presents facts showing the need for and reasonableness of the proposed rules relating to minimum energy efficiency standards for street, highway and parking lot lighting.

INTRODUCTION

The Commissioner, under Minnesota Statutes, section 216C.19, subdivision 1, proposes to adopt rules under chapter 14 establishing minimum energy efficiency standards for street, highway, and parking lot lighting in Minnesota. The Commissioner was ordered to promulgate these rules by legislation enacted during the 1992 session. This law directed the Commissioner to consult with the Department of Public Service and the Department of Public Safety to ensure the established standards are consistent with the overall protection of the public health, safety and welfare.

These proposed rules are meant to reduce energy consumption by establishing minimum energy efficiency standards for street, highway and parking lot lighting. After the adoption of these rules, no new or existing lighting system may be installed or replaced with lighting equipment with lamps having initial efficiencies less than 70 lumens per watt.

An informational memo was sent out to Minnesota Department of Transportation (Mn/DOT) District/Division Engineers and District/Division Traffic Engineers informing them of this law and seeking input on November 17, 1992. Solicitation of public opinion concerning the proposed adoption of these rules was done by publishing a Notice of Solicitation of Outside Information or Opinion in the State Register on November 23, 1992. The following additional parties and organizations were sent a copy of this notice:

- Illumination Engineering Society - Twin Cities Section
- League of Minnesota Cities
- Center for Energy & Urban Environment
- Minnesota Electrical Association
- Minnesota County Highway Engineers Association
- Norwest Lighting Inc.

No comments were received in response to this notice.

To develop these rules, the Commissioner assembled a special multi-disciplinary task force consisting of employees from the Minnesota Department of Public Service, Minnesota Department of Public Safety, and Mn/DOT. An official notice requesting rulemaking task force members was published in the State Register on November 15, 1993 in order to invite any interested parties (public or private sector) to participate in the development of these rules. No comments were received in response to this notice.

Prior to the drafting of these rules, the task force sent out electronic mail requests to other states on November 18, 1992 requesting any information concerning guidelines for roadway lighting. The task force received responses from a total of nine states but none of them had any energy standards established. On November 1, 1993, the task force sent out another electronic mail request to other states requesting any information specifically concerning the rules and legislation governing lighting energy efficiency standards. A total of six responses were received but none of the states responding had any rules or standards established. The task force also met and conferred with the Federal Highway Administration to determine if any similar energy efficiency standards had been written. It was confirmed that no standards relating to energy efficiency lighting for street, highway and parking lot had been formally established.

In addition to conducting literature searches, surveying the practices of other states, and soliciting public opinion, the task force utilized information contained in the following handbooks in developing these rules:

- Illuminating Engineering Society 1993 Lighting Handbook - Reference & Application (IES Lighting Handbook). This handbook was published by the Illuminating Engineering Society of North America (IESNA). IESNA is the recognized technical authority for the illumination field. IESNA's objective is to communicate information on all aspects of good lighting practices to its members, to the lighting community, and to consumers through a variety of programs, publications and services. The IES

Lighting Handbook is widely used as a reference guide for lighting design and installation by the lighting community nation wide. It provides up-to-date coverage of lighting developments, evaluation, interpretation of technical and research findings, and lighting application guidelines.

- Roadway Lighting Handbook. This handbook was published by the Federal Highway Administration. This handbook has been prepared to assist the engineering community in responding to lighting needs. The handbook presents the basic principles for the design, installation, operation, and maintenance for lighting systems for streets and highways under US DOT's jurisdiction.
- The AASHTO Informational Guide for Roadway Lighting. This guide was published by the American Association of State Highway and Transportation Officials (AASHTO). This guide has been prepared to reflect up-to-date practices in roadway lighting. It covers the luminance technique of roadway lighting design as well as the illuminance method which is used in the United States. This guide contains information for the lighting of freeways as well as for the lighting of streets, tunnels, underpasses and rest areas.
- 1991 Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways (MN MUTCD). This manual was adopted by the Commissioner of Transportation to provide a uniform policy for all traffic control devices on all public streets, roads, and highways within the State of Minnesota. This manual was prepared pursuant to the authority vested in Mn/DOT by Minnesota Statutes, section 169.06, subdivision 1. Standards described within this manual may also be used by private entities on facilities which they control.

Minnesota Statutes, section 216C.19, subdivision 1 was enacted by the Minnesota legislature in 1992. This law became effective August 1, 1992. According to Minnesota Statutes, section 14.12, the deadline for publishing notice of the proposed adoption of these rules was February 1, 1992. This deadline was not met due to the extensive amount of research; lack of existing energy efficiency standards; consensus building between the Department of Public Safety, Department of Public Service and Mn/DOT; and drafting that was necessary to prepare these rules for publication.

In accordance with the requirements of Minnesota Statutes, section 14.12, a letter was sent to the Legislative Commission to Review Administrative Rules on September 23, 1993 to inform them of the reasons why the Commissioner

did not publish the required notice of intent to adopt these rules within the 180 days after the effective date of the law requiring these rules to be promulgated. The Commissioner is committed to completing this rulemaking directive as expeditiously as possible while ensuring that these rules accomplish their legislative objectives.

The Commissioner believes that these proposed rules address the need for reducing the energy consumption in Minnesota by providing minimum efficiency standards for street, highway and parking lot lighting while also considering the overall protection of the public health, safety and welfare.

SMALL BUSINESS CONSIDERATIONS

In proposing these rules, The Commissioner has considered the provisions of Minnesota Statutes, section 14.115, concerning the impact of these rules on small businesses. The Commissioner has determined that the proposed rules do have a direct impact on small businesses. The impact, however, will be minimal. Those small businesses who provide parking lots for their customers need to have parking lot lighting that is in conformance with these rules.

Minnesota Statutes, section 14.115, Subdivision 2, requires the Commissioner to consider:

- a. the establishment of less stringent compliance or reporting requirements for small businesses;
- b. the establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses;
- c. the consolidation or simplification of compliance or reporting requirements for small businesses;
- d. the establishment of performance standards for small businesses to replace design or operational standards required in the rules; and
- e. the exemption of small businesses from any or all requirements of the rules.

In addition to the requirements under Minnesota Statutes, section 14.115, the law also requires the Commissioner to provide an opportunity for small businesses to participate in the rulemaking process.

While developing these rules, the task force has provided opportunities for small business participation during this rulemaking proceeding. In addition to the two notices published in the State Register for soliciting opinion and requesting participation in rulemaking task force activities, the Commissioner also sent a letter to the Minnesota Small Business Assistance Office to inform them of the drafting of these rules with a special reference to the potential impact these rules would have on small businesses. This letter asked the Minnesota Small Business Assistance Office for comments and also requested this agency to forward appropriate information on the rules to its members. The Commissioner did not receive any responses from this letter. A phone call was made to the Small Business Assistance Office in order to confirm that the letter was received. The Office confirmed that the letter was received and they did not have any input or comment concerning this rulemaking.

The Commissioner also sent out a letter to various power and utility companies in Minnesota on February 1, 1994 (some of which are small businesses as defined in Minnesota Statutes, section 14.115). In response to this letter, the Commissioner received several comments. These comments came from several companies who were concerned about their current inventory of lamps with initial efficiencies of less than 70 lumens per watt. These companies urged the Commissioner to consider the financial hardship that would result from the adoption of these rules (which require lamps with initial efficiencies of 70 lumens per watt or greater). In response to these concerns, the rulemaking task force decided to require replacement of less efficient lamps (less than 70 lumens per watt) with lamps that have initial efficiencies of 70 lumens per watt or higher **ONLY** when the lighting equipment (defined as a complete lighting fixture excluding the lamp) is worn out (defined as no longer capable of distributing light). [*Refer to Public Expenditure section for more details*] The task force believes that this will allow small businesses to use up most of their existing inventory and therefore prevent any financial hardship that would result from not using their existing inventory of lamps with efficiencies of less than 70 lumens per watt.

IMPACT ON AGRICULTURAL LAND

Adoption of these proposed rules will not have a direct or substantial adverse impact on agricultural land. Therefore, Minnesota Statutes, section 14.11, subdivision 2, is not applicable to this rulemaking proceeding.

EXPENDITURE OF PUBLIC MONIES BY LOCAL PUBLIC BODIES

In proposing these rules , the Commissioner has considered the provisions of Minnesota Statutes, section 14.11, subdivision 1, concerning the expenditure of public monies by local public bodies.

As stated above, the Commissioner sent out a letter to various power and utility companies in Minnesota on February 1st, 1994. The intent of this letter was twofold: (1) to inform these companies about the rulemaking proceeding, and (2) to find out the status of their inventory so that the rulemaking task force could get an idea of the economic impact these rules would have on these public entities. The task force was especially interested in how many mercury vapor lamps existed in the lighting systems under their jurisdiction.

The rulemaking task force was interested in mercury vapor lamps because these lamps are less efficient (have initial efficiencies of less than 70 lumens per watt). Mercury vapors lamps are not easily interchangeable with lamps of higher energy efficiencies. For example, lighting equipment designed for a mercury vapor lamp will not function with a high pressure sodium lamp and vice versa. Although there are conversion kits available in the industry today that can be added to the existing lighting equipment to convert this equipment to fit different types of lamps, studies have shown that the use of such conversion kits is not cost efficient. The task force needed this information in order to determine the approximate cost to public entities to replace all nonconforming lighting equipment after the adoption of these rules, since the use of any mercury vapor lamps TODAY are prohibited by the governing legislation (new improved mercury lamps in the future may be more efficient).

In addition to the letters sent out to the 38 power and utility companies, the Commissioner also sent a letter to the Minnesota Municipal Utility Association (MMUA), the Minnesota Rural Electric Association (MREA), the United Power Association (UPA) and the Cooperative Power Association (CPA). In this letter, the Commissioner requested the associations to forward appropriate information about this rulemaking to their members.

The Commissioner received a total of 27 responses (written and oral) from this letter. From the responses received, the rulemaking task force determined that the *majority* of power and utility companies *already* had projects in place to replace all existing less efficient lighting equipment and lamps.

On February 23, 1994, a representative from MMUA attended one of the rulemaking task force meetings to express several comments. MMUA represents the interests of Minnesota's 126 municipally-owned electric utility

companies. This representative stated that according to MMUA's records, 34 utility companies currently are in the process of converting lighting equipment and lamps. These utility companies, however, still had a portion of less efficient lamps in their existing lighting systems. MMUA estimated that conversions of lighting equipment and lamps of these companies would be completed in approximately 2 to 3 years. MMUA stated that if all of the less efficient lamps needed to be replaced *immediately* after the adoption of these rules, the estimated cost to these utility companies would be approximately \$350,000. This estimated cost did not include any waste that would result from not using their existing inventory of less efficient lamps.

The rulemaking task force considered MMUA's concerns and decided to require less efficient lighting equipment and lamps to be replaced ONLY when the lighting equipment is WORN OUT. The task force believes that this would allow these public bodies to use up most of their existing inventory because lighting equipment is defined in the rules as the *complete lighting fixture* excluding the lamp. Thus, lighting equipment would have to be replaced ONLY when the lighting fixture is damaged or broken and is no longer capable of distributing light. For example:

a mercury vapor lamp on a specific light pole on "Main Street" has burned out this lamp could be replaced with another mercury lamp according to these rules as long as the lighting equipment is still capable of distributing light. On the other hand, if this light pole on "Main Street" was later knocked down by a truck and resulted in a broken lamp housing, reflector and/or a damaged ballast, regardless of the condition of the mercury lamp, this light pole would have to be replaced with different lighting equipment consisting of a lamp that has an energy efficiency of 70 Lumens per Watt or higher.

When lighting equipment is no longer capable of distributing light, it needs to be replaced. The difference in the cost of installing lighting equipment with less efficient lamps (for example, a mercury vapor lamp) versus lighting equipment with lamps having initial efficiencies of 70 lumens per watt greater (for example, a high pressure sodium lamp) is minimal. Thus, the adoption of these rules will NOT require any additional expense to local public bodies beyond what the expense would be without the existence of these rules. These rules actually will result in a lighting system which costs less to operate, due to the better energy efficiency of the newly installed or replaced equipment.

Because of the above, the adoption of these proposed rules will not require a total expenditure of public monies by local public bodies of more than \$100,000 in either of the two years immediately following adoption.

PART-BY-PART STATEMENT OF NEED AND REASONABLENESS

8885.0100 DEFINITIONS.

Subpart 1. Scope. This subpart is needed to clarify the scope of section 8885.0100, which is to provide definitions for the terms used in parts 8885.0100 to 8885.0300.

Subp. 2. Existing lighting equipment. Minnesota Statutes, section 216C.19, subd. 1 requires all *EXISTING LIGHTING EQUIPMENT*, excluding sign lighting, with lamps having initial efficiencies less than 70 lumens per watt to be replaced when worn out with light sources using lamps with initial efficiencies of at least 70 lumens per watt. Existing lighting equipment is defined as lighting equipment that is in place or for which construction plans for installing lighting equipment have been under contract before August 1st, 1992. For example, if a construction plan including lighting equipment having less efficient lamps for a certain highway was under contract in July of 1992, but the construction of this project has not yet been completed, all lighting equipment that is included in this construction plan would be considered as existing lighting equipment, although the lighting equipment is physically not yet in place. The rulemaking task force believed that defining existing lighting equipment in this way would prevent the extra cost and administrative burden that would result if construction plans had to be redesigned.

This definition is needed to aid in the compliance with these rules. This definition is critical for determining WHEN lighting equipment is new or existing. This definition is reasonable because it is normally understood by the average person and is consistent with the overall purpose of the rules - to conserve energy while protecting the public health, safety and welfare without an undue administrative or financial burden.

Subp. 3. Initial Efficiency. This definition describes what initial efficiency is under these rules. Minnesota Statutes, section 216C.19, subdivision 1 establishes minimum energy efficiency standards for new and existing lighting. The governing legislation requires the use of lighting equipment with lamps having *Initial Efficiencies* of at least 70 lumens per watt. This definition is needed because it is a critical component of measuring compliance with these rules. This definition is reasonable because it is based on standards that are currently being used by lamp manufacturers. This definition defines initial efficiency as a measurement of energy performance of a new lamp, and is determined by dividing the initial lumen output of the lamp by its wattage and is expressed in lumens per watt. It is defined in such a way as to be easily understood by the average person.

The term, "*Initial efficiency*", sometimes referred to as "*Initial Efficacy*", is obtained by dividing the initial lumen output of the lamp by the lamp's wattage. The initial lumen output of a lamp is generally a value that is measured, calculated and provided by the manufacturers of the lamp. Such information can be obtained from lamp catalogs or lamp information bulletins, or specification sheets along with other information such as the wattage of the lamps, the input voltage ranges, etc. The lamp lumens normally decreases as the burning time of such lamp increases - this is called Lamp Lumen Depreciation (LLD). Therefore, a new lamp has a higher efficiency compared to a lamp that has been burning for 500 hours.

This definition is also compatible with the definition used in the US. Federal Energy Policy Act of 1992. This federal law governs the energy efficiency ratings and labelings for the manufacture and sale of lamps and lighting systems. This Act defines "efficacy" as *the lumen output of a lamp divided by its wattage, expressed in lumens per watt.*

Subp. 4. Lighting Equipment. Lighting equipment is defined as a complete lighting fixture and includes the parts of the fixture designed to distribute the light, to position and protect the lamp, and to connect the lamp to the power supply. This definition excludes the lamp. This definition clarifies that lamp(s) are excluded from these rules because lamp(s) are generally considered a part of lighting equipment. These rules require that worn out *EQUIPMENT* be replaced and not the lamp. The reason for this is because the Commissioner wanted to prevent any financial hardship that would result from utility companies not being able to use lamps with less efficiencies currently in their inventory (refer to description under "Expenditure of Public Monies by Local Public Bodies").

This definition is a critical component in measuring compliance with these rules. The governing legislation requires that existing *lighting equipment* with lamps with initial efficiencies of less than 70 lumens per watt be replaced. This definition is reasonable because it is based on information found in the Roadway Lighting Handbook, published by the Federal Highway Administration. As stated above, the Roadway Lighting Handbook is commonly used as a design guideline in the lighting field by lighting professionals. The handbook defines *lighting equipment* as a complete unit consisting of a *luminaire* and *support hardware*. *Luminaire* is defined in the handbook as a lighting unit consisting of a lamp together with the parts designed to distribute the light, to position and protect the lamp, and to connect the lamp to the power supply. This definition, therefore is consistent with the definition found in a professionally accepted lighting resource book. This definition will be

easily understood by the average person and will aid in the compliance with these rules.

Subp. 5. Lumen Output. This definition describes what lumen output means. This definition is a critical component of measuring compliance with these rules because as stated above, initial efficiency is obtained by dividing the initial *lumen output* of the lamp by the lamp's wattage. Lumen output is defined in the rules as the total luminous flux (power) of a lamp in lumens. The word "power" is included in parenthesis to clarify the meaning of the term, *luminous flux*, since *luminous flux* is not a term that is commonly used or understood by an average person.

This definition is reasonable because it is based on the information in the IES Lighting Handbook. As stated earlier IES is a recognized technical authority for the illuminating field, and the IES Lighting Handbook provides national standards and approved methods for various lighting related measurements. This handbook is widely used as a reference for lighting design and installation by the lighting community nation-wide. It provides up-to-date coverage of lighting developments, evaluations and interpretations of technical and research findings, and lighting application guidelines. In addition, the U. S. Federal Energy Policy Act of 1992, which governs energy efficiency ratings and labelings for the manufacture and sale of lamps and lighting systems, also references the IES as the authoritative source in determining lumen output.

Subp 6. Motor Vehicle Sales Lot. This definition describes what a motor vehicle sales lot is under these rules. This definition is needed so that citizens can clearly determine if an area under their control is subject to these rules. This definition is a critical component of measuring compliance with these rules. Motor vehicle sales lots are exempt from the requirements set forth in these rules (see discussion below in Subpart 8 for reason).

This definition is reasonable because it uses the definition from Minnesota Statutes, section 168.011, subd. 4 for the term *Motor Vehicle*. Minnesota Statutes, section 168.011, subd. 4 defines a motor vehicle as " ...any self-propelled vehicle not operated exclusively upon railroad tracks and any vehicle propelled or drawn by a self propelled vehicle" This definition of motor vehicle is broad and includes vehicles such as trolleys and all terrain vehicles. It was the Commissioner's intention to include all types of motor vehicle sales lots in this definition in order to exempt these lots from these rules.

Subp 7. Parking Lot. This definition describes what a parking lot is under these rules. The definition is needed so that citizens can clearly determine if

an area under their control is subject to these rules. This definition is a critical component of measuring compliance with these rules. The governing legislation requires the Commissioner to adopt rules for street, highway and *parking lot* lighting. This definition is needed to describe the physical limits of locations prescribed by these rules by defining *Parking lot* (Street and Highway are defined and described in Subpart 10).

The rules define *parking lot* as an improved area designated for the purposes of parking, storing, or allowing licensed motor vehicles to remain, but does not include a motor vehicle sales lot or parking area of a single family residence. In most cases, an area designed to have motor vehicles left unattended are hard surfaced; accessible from a street, road or highway; and are lighted. Owners of spaces designed to hold motor vehicles generally are paid a fee to provide such areas. They are responsible and liable for a level of safety and security to their users, and in most cases, lighting is used to provide that safety and security.

This definition is reasonable because it includes a majority of the areas used to park motor vehicles in Minnesota for any reason, including lots which have restricted parking such as *Employee Only* lots or *Patients Only* lots. This definition exempts motor vehicle sales lots since these vehicles are not individually owned or leased. Motor vehicle sales lot owners already provide adequate lighting for the conduct of their business. The economic advantages of energy efficient lighting is incentive enough for motor vehicle sales lot owners to conform to these rules, and thus, do not need to be subject to the specific standards required by providing energy efficient lighting. Single family residences are also exempt from this definition because most individuals do not utilize outside lighting for long periods of time. Therefore, energy consumption by single family residences is not a concern, and parking areas of single family residences do not need to be subject to the standards set forth in these rules. Thus, this definition is consistent with the overall purpose of the rules which is to protect the public health, safety and welfare.

Subp 8. Sign Lighting. This definition describes a specific type of lighting which illuminates overhead mounted sign panels on highways. This type of lighting is excluded from the requirements of these rules. Minnesota Statutes, section 216C.19, subd. 1 states in relevant part, "Existing lighting equipment, *excluding Roadway Sign Lighting*, with lamps with initial efficiencies...." Sign Lighting is a type of lighting which illuminates overhead mounted regulatory, warning, guide, and supplemental guide signs. This definition is needed because it is a critical component of measuring compliance with these rules since the standards in the rules do not apply to sign lighting.

This definition is reasonable because it is based on the information contained in the MN MUTCD. MN MUTCD is the authoritative resource on traffic control

devices, including signs, for use upon highways in Minnesota. This definition is commonly accepted and understood by professionals in the lighting field and will aid in the compliance with these rules.

Subp 9. Street, Highway. The definition of street and highway is defined in Minnesota Statutes section 169.01 subd. 29. This definition also includes private roads which are open to public travel, and under the jurisdiction of and maintained by a public authority. This definition is needed because it is a critical component of measuring compliance with these rules. The governing legislation requires the Commissioner to adopt rules for *street, highway and parking lot lighting*. This definition is needed to describe the scope of these rules.

Street and Highway are defined by using the definition in Minnesota Statutes, section 169.01, subdivision 29. Minnesota Statutes, section 169.01, subd. 29 describes a *Street or Highway* as "the entire width between boundary lines of any way of place when any part thereof is open to the use of the public, as a matter of right, for the purpose of vehicular traffic." This definition is easily understood by the public.

Minnesota Statutes, section 169.01, subd. 29 does not include private roads. Private roads, however, ARE included as part of the definition for street and highway in these rules. In order to establish a uniform system for street and highway lighting for the entire state of Minnesota, private roads were included in this definition. Private roads need to be included in the definition of street and highway in order to ensure energy efficient lighting on all roads which are open to public travel so that energy consumption can be reduced, and the public health, safety and welfare can be protected by providing adequate lighting to travel safely.

The MN MUTCD also includes *private roads* in its coverage of traffic control devices for Minnesota. The MN MUTCD includes private roads that are open to public travel and under the jurisdiction of and maintained by a public authority. The need for energy efficiency lighting standards on private roads is the same as for streets and highways, and therefore should be included in the definition for street and highway.

Subp. 10. Worn Out. This definition describes worn out as a condition when lighting equipment is no longer capable of functioning. This definition is needed so that citizens can clearly determine when lighting equipment needs to be replaced with lighting equipment having lamps with initial efficiencies of at least 70 lumens per watt. This definition is a critical component of measuring compliance with these rules because the governing legislation states " Existing

lighting equipment, ... with lamps with initial efficiencies less than 70 lumens per watt must be replaced when *Worn Out*."

This definition defines *Worn Out* as "a condition when lighting equipment is damaged or broken in such a way that it is no longer able to perform its primary function of distributing light." For example:

A mercury vapor lamp (less than 70 lumens per watt) is broken but the lighting equipment is still functioning - this lamp *can* be replaced with another mercury vapor lamp. The only time a mercury vapor lamp needs to be replaced with a more efficient lamp is when the *Lighting Equipment* is no longer capable of distributing light, such as when the fixture is broken, or the ballast is damaged.

Not all lamps are interchangeable among different types of lighting equipment. This definition is reasonable because it considers the cost and time that occurs when replacing lamps and the extra cost and time that would occur if good lighting equipment need to be replaced when only the lamp is broken. This definition encourages compliance with the rules.

8885.0200 PURPOSE AND SCOPE

Subpart 1. Purpose. This subpart explains the reason for the proposed rules. The subpart is needed so that the public is aware that the rules are intended to reduce energy consumption while protecting the public health, safety and welfare. This subpart is reasonable because it reflects the legislative intent of this rulemaking, and promotes ease of understanding and compliance with these rules.

Subp. 2. Scope. The purpose of this subpart is to define the scope of these rules. This subpart is needed to indicate that these rules are applicable to any new installations and replacements of existing highway, street and parking lot lighting but excludes sign lighting. This subpart is a critical component of measuring compliance with these rules because it describes *what* and *when* lighting systems are subject to the requirements set forth in these rules. This subpart is also needed to clarify that these rules do not apply to sign lighting. This subpart is reasonable because it is consistent with the MN Statutes, section 216.19, the governing legislation for these rules. This subpart promotes compliance and ease of understanding with this rules.

8885.0300 REQUIREMENTS & PROHIBITIONS

Subpart 1. Requirements. This subpart specifies that all lighting installations and replacements of worn out lighting equipment (as these terms are defined in the rules) must be installed or replaced with lighting equipment having lamps with initial efficiencies of at least 70 lumens per watt (as these terms are defined in the rules). This subpart is needed because it is a critical component of measuring compliance with these rules. This subpart is reasonable because the governing legislation states, "No new highway, street or parking lot lighting may be installed in violation of these rules", and also states, "Existing lighting equipment ... must be replaced when worn out with light sources using lamps with initial efficiencies of at least 70 lumens per watt." This subpart corresponds to the overall purpose to these rules which is to reduce energy consumption while protecting the public health, safety and welfare.

Subp. 2. Prohibitions. These rules prohibit the installation of any lighting equipment having lamps with initial efficiencies of less than 70 lumens per watt. This section is needed so that the public can clearly determine which lighting equipment is prohibited by these rules. This section is reasonable because the rules require the public to use lighting equipment which will result in a low cost and more efficient lighting system, thereby reducing energy consumption. This section corresponds to the overall purpose of these rules which is to reduce energy consumption while protecting the public health, safety and welfare.

WITNESSES AND SUMMARY OF TESTIMONY

A. Expert witnesses. If a hearing is required, the Commissioner does not intend to use expert witnesses to provide evidence establishing the need for and reasonableness of the proposed rules. The Commissioner may, if necessary to adequately address evidence and argument presented by the public, arrange for the testimony of expert witnesses.

B. Department witnesses. If a hearing is required, the Commissioner will introduce its Statement of Need and Reasonableness as an exhibit into the record in accordance with Minnesota Rules, part 1400.0500, subpart 3. The following personnel will be available at the hearing, if one is required, for questioning by the Administrative Law Judge and other interested persons, or to briefly summarize all or a portion of the Statement of Need and Reasonableness if requested by the Administrative Law Judge.

1. Sue J. Lodahl. Sue J. Lodahl is the State Lighting Engineer, Mn/DOT Office of Traffic Engineering . She chaired the task force that developed these rules. She may be called to testify about the need for and reasonableness of any of these proposed provisions.
2. Stephanie Vinger. Stephanie Vinger is an Electrical Engineer for Mn/DOT Office of Traffic Engineering. She assisted the State Lighting Engineer in preparing and organizing all task force activities concerning the development of these rules. She may be called to testify about the need for and reasonableness of any of these proposed provisions.
3. Bruce Nelson. Bruce Nelson is a Senior Engineer in the Energy Division of the Dept. of Public Service. He is a member of the task force and is familiar with the energy and building codes. He may be called to testify about the need for and reasonableness of any of these proposed provisions.

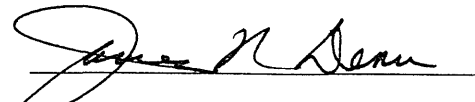
C. Task force members. The Commissioner may, if necessary to adequately address evidence and argument presented by the public, call some members of the task force that developed these rules to testify about the need for and the reasonableness of any of the proposed provisions. The members of the task force, not mentioned above, that may be called to testify are:

Robert J. Vasek	Mn/DOT, Metro Division Traffic Studies Engineer
Dan C. Brannan	Mn/DOT, Traffic Engineering Safety Specialist
Steven M. Misgen	Mn/DOT, Traffic Engineering Signals Operation Engineer
Mike B. Weiss	Mn/DOT, State Signing Engineer
William E. Lunz	Dept. of Public Safety, Capital Security Division Manager

CONCLUSION

Based on the above part-by-part justification, these rules are needed to establish minimum energy efficiency standards for street, highway, and parking lot lighting as required by the Minnesota Legislature in Minnesota Statutes, section 216C.19, subdivision 1. The Commissioner's proposed rules are a reasonable means of reducing energy consumption because they establish minimum energy efficiency standards of at least 70 lumens per watt for all lamps and prohibit the much less efficient lamps currently in use. They also fulfill the statutory objectives of considering the overall protection of the public health, safety and welfare. Only those provisions necessary to achieve the legislature's objectives in enacting Minnesota Statutes, section 216C.19, subdivision 1, or those that are required to effectively implement, administer, and enforce that section have been included in these rules.

DATE : 10/13/94



James N. Denn, Commissioner

Department of Transportation