STATEMENT OF NEED AND REASONABLENESS

SOLAR COLLECTOR CERTIFICATION

DEPARTMENT OF ENERGY, PLANNING AND DEVELOPMENT

INTRODUCTION

Minnesota adopted the Residential Energy Credit of 1979 for certain renewable energy equipment and earth sheltered homes. Active solar systems for space and/or water heating, wind energy systems and geothermal energy conversion devices automatically qualify for the state tax credit since they are eligible for the federal tax credit. Specific rules define passive solar systems, earth sheltered homes and biomass conversion equipment that qualify for the state tax credit.

In 1980, the legislature became concerned that these tax credits could be applied to solar equipment that could not perform as claimed by the seller. Occasionally the misrepresentations were due to errors or misunderstandings, but others were due to outright fraud. As the solar collector is the least understood component of most active solar systems, the 1980 legislature passed legislation requiring that solar collectors sold in the state after 1981 January 01 be certified for durability and performance by the Energy Division of the Department of Energy, Planning and Development in order to qualify for the state tax credit. The law included specific measures for the certification process.

Collector certification programs had been operating in other states prior to 1980. Most notably, the states of California and Florida had well developed programs. Unfortunately, those programs were not compatable with each other, and there was no assurance that other states adopting collector certification requirements would develop procedures consistent with any of the previously operating programs. A number of states interested in promoting the use of solar energy, including Minnesota, formed a group of state government representatives in 1979 to develop national guidelines for the operation and test procedures for collector certification programs. With U.S. Department of Energy assistance, the group represented 36 states and became known as the Interstate Solar Coordination Council (ISCC).

Minnesota certification procedures were needed by June of 1980 to assure that certified collectors would be available to consumers by early 1981. However, the ISCC concensus procedure draft was not finalized until December of 1980. Thus, the department elected to adopt a brief, temporary rule which would automatically certify all collectors sold after 1980 December 31. Essentially, that rule extended the conditions for receiving the tax credit that had been in effect before the collector certification law was passed, i.e., all collectors qualifying for the federal credit would qualify for the state credit. Adopting a temporary rule gave department officials time to work with the ISCC to develop final national collector certification guidelines, and to adopt a Minnesota program based on the guidelines.

Both the ISCC and the department worked closely with the solar industry in developing the guidelines. Nationally, the Solar Energy Industry Association (SEIA) worked diligently with ISCC to assure that the

certification procedure would be acceptable to the industry. In Minnesota, the two major solar energy groups representing the design and manufacturing indurtries at the time, the Minnesota Solar Energy Association (MSEA) and the Solar Resource Advisory Panel (SRAP), contributed greatly to the form of the final rules being proposed.

SEIA began their own solar collector certification program in 1979. After ISCC formulated its recommended guidelines, SEIA dropped its program and joined ISCC to form a corporation dedicated to the testing and certification of solar equipment, called the Solar Rating and Certification Corporation (SRCC). The SRCC, based in Washington, DC, has members from both SEIA and ISCC on its Board of Directors. SRCC personnel assure that manufacturers comply with the requirements for certification, and grant SRCC Certification. All six states currently requiring collector certification will accept either SRCC certification or the testing required for SRCC certification.

Rules Concerning the Certification of Solar Collectors was published in the State Register on page 1782. On 1982 April 05, a Notice of Intent to Adopt Rules Governing the Certification and Registration of Solar Collectors without a Public Hearing was published in the State Register on page 1669. This notice allowed for comments on the proposed rules, which were published immediately following the notice, for a period of 30 days.

OUTLINE

The proposed rules will allow a manufacturer to use certification by SRCC, or other national organization meeting the criteria in the proposed

rules, for automatic certification in Minnesota. The testing and certification documents from the national program are simply submitted with application for Minnesota collector certification.

If the evaluation is performed by the department, the certification procedure can be summarized as follows:

1) Department randomly selects one collector from at least five in the manufacturers stock.

2) Manufacturer has sample collector tested at independent testing laboratory.

3) Manufacturer applies for certification by the Department.

4) Department calculates performance rating and evaluates safety and durability test results.

5) Department grants certification.

6) Manufacturer affixes certification label to units eligible for the tax credit.

Testing performed on the collector previous to the effective date of the rules may be sufficient testing for the Minnesota certification program.

Special procedures are used to certify collectors which are 1) similar to a collector model previously certified by the Department, 2) innovative and cannot be tested and evaluated according to the standard procedures or 3) manufactured under license to the holder of the original collector cer-

tification. All collectors certified by the Department must have a minimum warranty specified in the rules. A six month grace period is provided to allow for testing and certification of collectors.

Certain types of collectors or categories of collectors may be eligible for registration by the Department, which is much less rigorous than the certification process, but still qualifies the system for the tax credit. Custom built collectors, collectors with low volume sales and the initial collectors of a new model manufacturered by a firm may be eligible for registration. Collectors constructed by the taxpayer for their own use from components which do not comprise a kit are eligible for the credit but are exempt from either certification or registration.

STATEMENT OF NEED AND REASONABLENESS

This statement of need and reasonableness will explain why the steps in certifying collectors are required for an efficient, effective program. The proposed rules are identical in many respects to the procedures recommended by the ISCC and used by the SRCC. In addition, the Minnesota ISCC representative helped develop many of the ISCC procedures. Consequently, it is recommended that the proposed rules copied from the ISCC procedures be adopted without change in order to be consistent with national guidelines.

The format used in presenting this statement of needs and reasonableness will be to 1) identify the rule number, 2) state the title or a short description and 3) explain the intent and need of the proposed rule. Direct quotes from the rules will be underlined.

6 MCAR 1.1501 Purpose and authority.

This section is necessary to identify the statutory authority and requirements for the Department to promulgate these rules.

6 MCAR 1.1502 Definitions.

The terms included in this section are used in the following rules and may not be precisely understood by the reader. Some of the entries are simply definitions commonly used in the solar community, while others are precise statements to clarify terms which may have multiple definitions. Definitions of may of the technical terms are extracted directly from the ISCC guidelines.

6 MCAR 1.1503 Applicability of rules.

A. Generally.

This section identifies the generic types of solar collectors which are required to be certified in order to be eligible expenditures for the renewable energy tax credit.

Note sentence 2: If certification is required for a collector but the collector has not been certified, neither the collector nor other solar system components are eligible for the credit.

This statement is needed because a taxpayer may infer that only the collector must be excluded from eligibility for the tax credit if it is not certified, and may claim a credit on the other system components. Excluding all system components is reasonable since it is not possible to accurately represent the performance and durability of the collector, and hence the system, if the collector has not been properly tested and evaluated.

This section also states that all solar collectors need to be certified, regardless who installs the system. In general, for the purpose of these rules, a solar collector is considered independently from the system. Therefore, it is reasonable that the type of installer is not crucial to compliance with the requirements for solar collector certification.

B. Exceptions.

It is the intent of these rules to require that solar collectors which are mass produced and mass marketed--those which may have a major impact on

solar system sales--must be certified to assure that the collectors have met minimum durability standards and that the claimed performance can be documented. However, it is important not to inhibit individual or corporate innovation or the variety of marketed collectors.

The exceptions listed in this section attempt to provide maximum flexibility to manufacturers of solar collectors and to create alternative mechanisms to comply with these rules for persons building systems completely tailored to the requirments of the site and applications. In addition, it is intended that collectors which have previously been tested or certified will be able to use that information in complying with these rules. Those exceptions are as follows:

1) Home-built solar collectors. As the labor to build a solar collector cannot be claimed in the tax credit, and home built collectors are frequently made from conventional materials, home-built collectors tend to be low cost. In addition, an owner/builder tends to be more aware of the operation of their collector, so the collector tends to be quite reliable. Under the standard procedures, every taxpayer who builds their own system would need to have their collector tested and certified to be eligible for the tax credit. To avoid this unreasonable requirment, home-built collectors are exempt from certification.

2) Custom-built solar collectors. Some contractors build solar collectors which are completely tailored to the application and the site of installation. Each installation tends to be unique, with significant differences between the collectors used at different sites. These collectors would be eligible for registration. However, a contractor who uses a con-

sistent set of materials to build a collector at the site to a uniform design would be simply assembling a solar collector kit. Solar collector kits, even if assembled at the site, are required to be tested according to the full certification procedure.

The concept of "registration" is being established in these rules to allow the department to monitor the number and type of collectors receiving the tax credit without being certified. Registration is needed to assure both the taxpayer and the contractor that the device being constructed will be eligible for the tax credit, but will not require nor imply that the collector has been fully evaluated according to these rules. Registration simply means that a system using the collector has been noted by the Department and that the system will be an eligible expenditure for the tax credit. The collector is thoroughly described in the application for registration. If a contractor builds many (more than 20) systems a year using collectors which are identical from site to site, the contractor will need to have a sample of that collector tested and the contractor will need to apply for collector certification.

Though the registration process will entail paperwork for the contractor, it is a reasonable requirement since it is a positive method of assuring that the system will be eligible for the tax credit without needing to have the collector tested and evaluated. Contractors reviewing the draft of this provision indicated that the procedure appears to fit into their normal sales and installation cycle.

3) Low volume sales. As a collector design is developed, a manufacturer typically produces a few units of the model to evaluate the manufac-

turability and marketability of the product. In addition, even if a manufacturer applies for certification immediately after the collector design is finalized, testing and evaluation typically requires 4 to 6 months to complete. The intent of this exception is to allow a manufacturer to sell the first units of a new model as eligible for the tax credit even though the collector is not certified. The manufacturer, or their agent, will simply need to register each of the installations made using the new model. After consulting with the collector manufacturing community, it was decided that the sale of 20 systems using a particular new collector model was a reasonable limit within which the manufacturer can sufficiently explore all significant aspects of the new model.

4) Previous testing. As collector tests performed in accordance with the national test standard are repeatable, it is unnecessary to require that collectors must be retested to comply with the Minnesota collector certification program. This section allows manufacturers to use the results from tests performed previous to the effective date of these rules to satisfy the test requirements.

5) Previous certification. Various collector certification programs existed prior to the creation of the Interstate Solar Coordination Council (ISCC), the corsortium of state government representatives which developed the national certification guidelines. Though the specific requirments of those programs were not compatable with each other, each made a reasonable attempt to evaluate the quality and performance of the certified collector. In some cases, the testing was more expensive than that required in these rules. It is reasonable to allow manufacturers to use previous certification to comply with the Minnesota requirements. Each of the cer-

tification programs sited in this section required testing by an independent test laboratory in accordance with national standards. Most of the collectors expected to qualify for Minnesota certification under this section have been marketed for many years and withstood the test of the marketplace.

6) Grace Period. To allow for selection, testing, application and certification of solar collectors, it is necessary to postpone the implementation date for required certification until 6 months beyond the date of adoption of these rules.

6 MCAR Section 1.1504 Application fees.

It is the intent of these rules that persons benefitting by colletor certification will absorb a portion of the costs to administer the program. Therefore, fees will be charged for the services performed to certify products. The amount of the fee is based primarily on the estimated time and expense required to perform the different services. These fees have been compared to previous and other certification programs, and are in reasonable conformity.

6 MCAR Section 2.1505 Units of Measure.

The United States Congress passed the metric conversion act in 1975, which provides for voluntary conversion to the International System of Units (SI), or the "metric system." The guidelines for collector certification written by the ISCC and adopted by the SRCC are based on the SI system. By specifying metric units for use in the collector certification

program, the Minnesota program will be consistent with the national recommendations. In addition, the testing and rating information provided in metric units in the collector certification program will continue to be useful in the future.

Information provided in the application for certification in inch-pound units will continue to be accepted. This allows manufacturers more familiar with inch-pound units to avoid the cost and inconvenience of converting to SI nomenclature at this time.

6 MCAR Section 2.1506 Certification Procedure.

Solar collectors may be certified in the Minnesota program as a standard solar collector, a collector similar to a model previously certified, an innovative collector which cannot be tested under the standard procedures or a collector manufactured by a liscensee to a firm which has previously received certification for the collector model. In addition, custom-built collectors and collectors with low volume sales are eligible for registration to qualify for the tax credit. This section describes the procedures that need to be followed to secure certification or registration in the various categories. Each of these procedures follows the ISCC guidelines.

A. Standard solar collector.

Time constraints on the department and, where appropriate, the manufacturer, have been incorporated into these ISCC guidelines to assure that certification occurs in a timely manner. The time schedule has been

discussed with representatives from the solar community, and appears to impose reasonable requirments on the manufacturer and acceptable expectations of the department.

The random selection procedure, contained in steps 1 and 2 of this section, was accepted nationally in order to assure that a collector tested for certification is a representative sample of the manufactured collector model.

In paragraph 4, the manufacturer has the option of declaring the information submitted in the application as non-public data. This provision is necessary in order to assure manufacturers that their proprietary information is not inadvertently disclosed to competitors through the certification process.

The information requested from the manufacturer is designed to adequately identify the collector model and to assure compliance with the product certification and labeling provisions of certification. In addition, certain information, such as the working fluid and flow rate, are intended to assure that the collector is properly tested and applied.

The statement of commitment contained in paragraph 4.h. outlines the obligation of the manufacturer in order to secure certification for their collector. Each of those requirments is further explained in the rules.

In paragraph 6, the manufacturer is required to affix the certification symbol and required label information to each collector in order for it to be an eligible expenditure for the tax credit. Flexibility is provided to the manufacturer for the format and presentation of the label

information. The manufacturer may affix a separate Minnesota solar collector certification label on the collector or incorporate the label information and certification symbol in a label or information plate of the manufacturer's design. However, the label must accurately represent the required label information, and consequently is subject to approval by the department.

Information on certified collectors will be made available to consumers through the list distributed by the Energy Information Center operated by the Department, as indicated in paragraph 8.

B. Similar solar collector.

A manufacturer may elect to change minor components or materials of a certified collector to create a new model. The new collector may be certified by predicting the changes in performance and durability from those of the previous model. The manufacturer is required to document all changes, and as stated in paragraph B.1.c., provide an estimate of any changes in performance, reliability or durability that may occur (B.1.d.). If certification is granted, the manufacturer will be required to comply with all other provisions of collector certification.

C. Innovative solar collector.

In order to assure that unconventional solar collectors can be certified, and consequently qualify for the tax credit, it is necessary to have provisions to incorporate testing and certification based upon the peculiar qualities of the innovative collector. If a collector cannot be fairly or adequately tested and certified under the standard collector pro-

cedures, the manufacturer may state why the collector cannot be tested and instead propose a method of testing and certifying their particular type of collector. In order to assure flexibility to the manufacturer, few restrictions are placed on the proposed methodologies for testing and certification.

D. Collector manufactured by licensee.

This section provides a methodology to certify a solar collector manufactured by a firm under license to the original holder of collector certification. Certification is not automatically transferred to the licensee, and the licensee needs to secure certifiction under their own name.

E. Custom-built solar collector.

The information that is requested from the contractor about their custom-built collector is intended to document the design and components of the collector so that the collector qualifies as custom-built.

F. Solar collector kit or manufactured solar collector.

Manufacturers who produce only enough collectors for 20 or fewer systems per year or manufacturers who wish to market initial production units of a new model while it is being certified are eligible to register each of the systems sold. Though the manufacturer will be applying for registration only, they must include much of the same product information required for certified solar collectors. This information will allow the Department to assure that all systems using the registered collector are uniform in their materials and design.

The second paragraph of this section states that a manufacturer may apply for a grace period of 6 months in order to complete testing and certification requirements. This allows a manufacturer to sell prototypes and initial production runs of a collector under the low volume collector provisions, the continue to sell non-certified collectors that will qualify for the tax credit while certification procedures are being completed.

6 MCAR Section 2.1507 Test methods and minimum standards for certifying solar collectors.

All statements in this rule are copied verbatim from the ISCC guidelines. The rule specifies the procedures to be used by the independent testing laboratories to evaluate a solar collector. In order to assure that the instructions to the laboratory are identical to the requirments for the national program, it is recommended that this rule be adopted without modification.

6 MCAR Section 2.1508 Evaluation criteria, ratings and warranties.

The criteria which must be met under each of the four certification procedures is specified in paragraphs A through D. Those criteria are consistent with the ISCC recommended guidelines.

E. Rating.

The ISCC recommends rating the performance of a solar collector in up to 15 categories representing various combinations of solar radiation levels, climate and applications. Minnesota certification

ratings are based upon the same procedures. However, due to limits on the applications eligible for the tax credit (no swimming pools or commercial systems, for example) and the state climate, Minnesota certification requires performance ratings in only two adjacent categories of the three listed in Exhibit 6 MCAR Section 2.1512-1, which are sufficient to compare the performance of various collector models.

F. Warranty.

In order to establish minimum warranty requirements in the industry, the Minnesota Solar Energy Association recommended that a minimum warranty be required to receive collector certification. The department has accepted that recommendation, and in addition has incorporated their recommendation that the minimum warranty period be based on the expected design life of the collector. This procedure is particularly reasonable, since it requires a warranty of adequate length for long life time collectors, while allowing much shorter waranty periods on low-cost, short lifetime collectors. The provisions of the warranty are extracted from the Magnuson-Moss Warranty--Federal Trade Commission Improvement Act.

G. Laboratory approval.

The Solar Rating and Certification Corporation evaluates the capability of laboratories to perform collector testing under the procedures used in the SRCC certification program. As the Minnesota program will make the same tests on the collectors, it is reasonable to use the list of accredited laboratories from the SRCC, rather than attempting to evaluate the capabilities of the laboratories through an independent site visitation and analysis.

6 MCAR Section 2.1509 Verification retest.

This rule is to provide a methodology to assure that a collector marketed by the manufacturer is, indeed, the same collector that was originally certified by the Department. The prodecures are extracted from the ISCC guidelines.

The procedure provides that the manufacturer shall absorb the cost of retesting, if required. However, if the sample collector is determined to be constructed of the same materials and design as the orginally certified collector and passes the retest, the Department will be required to reimburse the manufacturer for actual shipping and testing charges. This protects the manufacturer from indiscriminately being required to retest their product at their own expense. However, if the challenge is valid, i.e. that changes have taken place, the manufacturer is not reimbursed and incurs the expense of retesting. In addition, the certification will be suspended. The cost of the retest can be considered to be the penalty for making unapproved changes in the design, materials or quality of the collector.

The manufacturer will have the option of having a second sample tested for compliance with the retest provision. In no case will the cost of the retest be absorbed by the Department. In fairness to the manufacturer, the test(s) performed under the retest provision may be used in a subsequent application for certification of the collector as a new model.

6 MCAR Section 2.1510 Terminating certification.

Certification may be voluntarily terminated by the manufacturer, or withdrawn by the department for any of a number of reasons. Each of the

reasons for termination is a violation of the agreement signed by the manufacturer upon receiving collector certification.

C. Notification of suspension, termination or revocation of certification.

The department will notify administrators of other collector certification programs that a certification has been revoked, as the same collector may be certified in their program or their certification could have been based upon previous certification by the department.

6 MCAR Section 2.1511 Appeal Process.

The manufacturer may disagree with a final ruling determined by the department. The manufacturer has one month (20 state business days) to file an appeal. The department will then set up an advisory review board to evaluate the certification application and subsequent decisions. The authority to make the final determination remains with the department, however, though the recommendation of the advisory review board will be used to make the final determination. It is reasonable to allow the authority to remain with the department in order to provide consistancy in the operation of the certification program. The department agrees with the ISCC and SRCC that it is unreasonable to delegate the final authority to persons not intimately involved in the certification program.

6 MCAR Section 2.1512 Solar Collector Certificate.

The department will provide a certificate to the manufacturer specifying the rights and obligations of the manufacturer. In addition, the

certificate will include the information from the test and evaluation of the sample collector. The design life and warranty terms are included in the certificate, along with the required rating information.