

cell either at the gene or chromosome level. Such mutations may result in teratogenic or carcinogenic effects in exposed persons, as well as mutagenic effects that are transmitted to future generations. Since some chemicals induce only one genetic alteration, studies for both gene (point) mutations and chromosome aberrations are needed in the basic screening step. The preferred test for gene mutations is the *S. typhimurium* reversal mutation assay (Ames test). The *E. coli* WP2 reverse mutation assay may be substituted if this system is likely to be more sensitive to the test chemical. While an *in vitro* mammalian cytogenetics test is preferred in testing for chromosome aberrations, an *in vivo* mammalian cytogenetics test may be substituted where a scientific rationale exists.

(2) Test protocols and estimated cost. OECD: Estimated cost of tests. (i) *Gene Mutations-S. typhimurium* Reverse Mutation Assay—\$1,000; *E. coli* WP2 Reverse Mutation Assay—\$350. (ii) *Chromosome Aberrations-In vitro* mammalian cytogenetics test \$3,000; *In vivo* mammalian bone marrow cytogenetics test; \$13,000. Micronucleus test—\$2,000.

IRLG: None.

TSCA, Section 4: Proposed—44 FR 44054, § 772.114-1—772.114-4.

FIFRA, Section 3: Proposed—43 FR 37388, § 163.84-1—163.84-4.

Dated: January 19, 1981.

(15 U.S.C. 2601 et seq.)

Douglas M. Costle,
Administrator.

[FR Doc. 81-2051 Filed 1-26-81; 8:45 am]

BILLING CODE 5560-31-M

40 CFR Part 772

[OPTS-46007A; TSH FRL 1593-3-1594-4; TSH-FRL 1720-1a]

Environmental Test Standards: Clarification of Policy; Extension of Time for Comment and Rescheduled Meeting

AGENCY: Environmental Protection Agency (EPA).

ACTION: Extension of time for comment.

SUMMARY: This notice extends the comment period and reschedules the related meeting, open to the public, to receive oral comment for the Agency's proposal of certain environmental test standards published in the Federal Register on November 21, 1980 at (45 FR 77332). This notice also gives a clarification of policy respecting that proposal's preamble discussion of these standards' relationship to international guidelines, particularly those being

developed through the Organization for Economic Cooperation and Development (OECD).

DATES: Written comments should be submitted on or before Monday, March 16, 1981. The opportunity to present oral comments in an open meeting has been rescheduled to Tuesday, March 31, 1981, 1:00-5:00 p.m. The previously announced meeting for February 10th is hereby canceled. See below for further details on this open meeting.

ADDRESSES: Written comments should bear the EPA document control number (OPTS-46007A) and should be submitted to: Document Control Officer (TS-793), Management Support Division, Office of Pesticides and Toxic Substances (OPTS), Environmental Protection Agency, Room E447, 401 M St., SW, Washington, D.C. 20460, (202-755-8050).

See Supplementary Information, Extension of Time for Comment for location of the open meeting.

FOR FURTHER INFORMATION CONTACT: John B. Ritch, Jr., Director, Industry Assistance Office (TS-799), Office of Pesticides and Toxic Substances, Environmental Protection Agency, Room E427, 401 M St., SW, Washington, D.C. 20460. Toll free: (800-424-9065); in Washington, D.C.: (202-554-1404).

SUPPLEMENTARY INFORMATION:

I. Background

The Agency is proposing a series of generic standards for development of test data to have available for incorporation in specific chemical testing rules as they are issued under section 4 of the Toxic Substances Control Act (TSCA). The authority for these proposals is TSCA, Pub. L. 94-469; 90 Stat. 2006; 15 U.S.C. 2603. Previously published proposals covered the development of data on chronic health effects and Good Laboratory Practices for health effects (May 9, 1979, 44 FR 27334), and also on acute and subchronic toxicity, mutagenic, teratogenic and reproductive effects and metabolism studies (July 26, 1979, 44 FR 44054). On November 21, 1980 (45 FR 77332) the Agency proposed standards for development of test data on certain physical and chemical characteristics of substances and Good Laboratory Practices related to environmental effects testing. The notice covered testing for Density/Relative Density, Melting Temperature, Vapor Pressure, Octanol/Water Partition Coefficient and Soil Thin Layer Chromatography. In the future the Agency will be proposing additional test standards for neurobehavioral toxicity, other physical, chemical and environmental persistence

characteristics and various ecological effects.

In the preamble to the November 21st proposal (45 FR 77335) the Agency discussed the relationship of TSCA test standards to interagency and international test guidelines. Since then, the Agency has been requested to clarify this relationship, in particular with respect to its activities within the framework of the Organization for Economic Cooperation and Development (OECD). The clarification of policy below addresses this concern.

II. Clarification of Policy: Relationship to International Guidelines

In proposing these requirements, EPA recognized its obligations under Title IV of the Trade Agreements Act of 1979 (Pub. L. 96-39). That law provides the legal framework for implementing trade agreements entered into by the United States. Title IV (the Standards Code), by setting forth principles and procedures for Federal agencies, including EPA, to follow in rulemaking, aims at preventing the creation of unnecessary technical barriers to foreign trade.

As stated in section 401, the Standards Code is not intended to prevent Federal agencies from making rules or setting standards affecting international trade, for example, in chemical products, if such measures have as a demonstrable purpose the achievement of a legitimate domestic objective, such as protecting health, safety or the environment within the United States, and do not operate to exclude imported products which fully meet the objectives of such measures. Title IV states, however, that agencies involved in such rulemaking shall consider the adoption of existing international standards, if they are appropriate, and shall ensure that imported products are treated no less favorably than like domestic or other imported products.

As noted in the earlier Federal Register notice, the U.S. EPA has been a full and regular partner in extensive international consultations and negotiations in the OECD during the development of its chemical testing and other requirements under TSCA. The Agency places a high priority on these activities because of benefits both for international chemical trade and for more effective health and environmental protection.

U.S. experts, along with those of other OECD member states, have worked since 1977 to develop agreed chemical testing guidelines and good laboratory practices, as well as an agreed set of data that should be developed for new chemicals prior to marketing. The

United States strongly endorsed the work of the expert groups at a meeting of high level national regulatory officials in May 1980 and firmly committed the United States to domestic implementation.

Therefore, the policy of the United States with respect to the current proposal is to pursue consistency in its test standards with the OECD Test Guidelines. They will have the same basic requirements, so that data developed according to either EPA or OECD procedures with respect to those requirements should satisfy EPA needs.

A concerted effort will be made to incorporate OECD wording into EPA standards/guidelines; however, where EPA language provides a substantial improvement or is necessary to comply with a U.S. statutory or judicial requirement, it can be used. Additions to, or deletions from, the OECD guidelines will be strictly limited and a rationale provided in such cases. Additions should generally be limited to suggested or preferred criteria or to explanatory phrases (rather than required) such that the basic requirements cannot be construed as being different.

III. Extension of Time for Comment

In the November 21st notice, a deadline of January 21, 1981 was set for receiving written comments, and an opportunity to present oral comment was offered on February 10, 1981. Today's notice extends the time for filing written comments until Monday, March 16, 1981, cancels the February 10th meeting and announces a new opportunity to present oral comment in an open meeting on March 31, 1981.

Several foreign governments have indicated a desire to comment on these proposed test standards and a difficulty in doing so before the deadline set for written comment. In addition, interested parties in the U.S. have requested an extension of the comment period. Therefore, the Agency is granting an extension of the time for comment. Directions for filing written comment are given under ADDRESSES above.

The open meeting will be held from 1:00 p.m. to 5:00 p.m., Tuesday, March 31, 1981, in Room M3906, Waterside Mall, U.S.E.P.A. Headquarters, 401 M Street, S.W., Washington, D.C. 20460. The opportunity to present oral comment is granted to persons having some information, interpretation or argument on alternatives that is not duplicative of their written commentary and is more easily communicated in an oral exchange than in writing. Persons wishing to make presentations should request time by contacting the Industry

Assistance Office by telephone (800-242-9065 or, in Washington, 554-1404).

(Sec. 4, Toxic Substances Control Act (TSCA), (90 Stat. 2006 (15 U.S.C. 2603)))

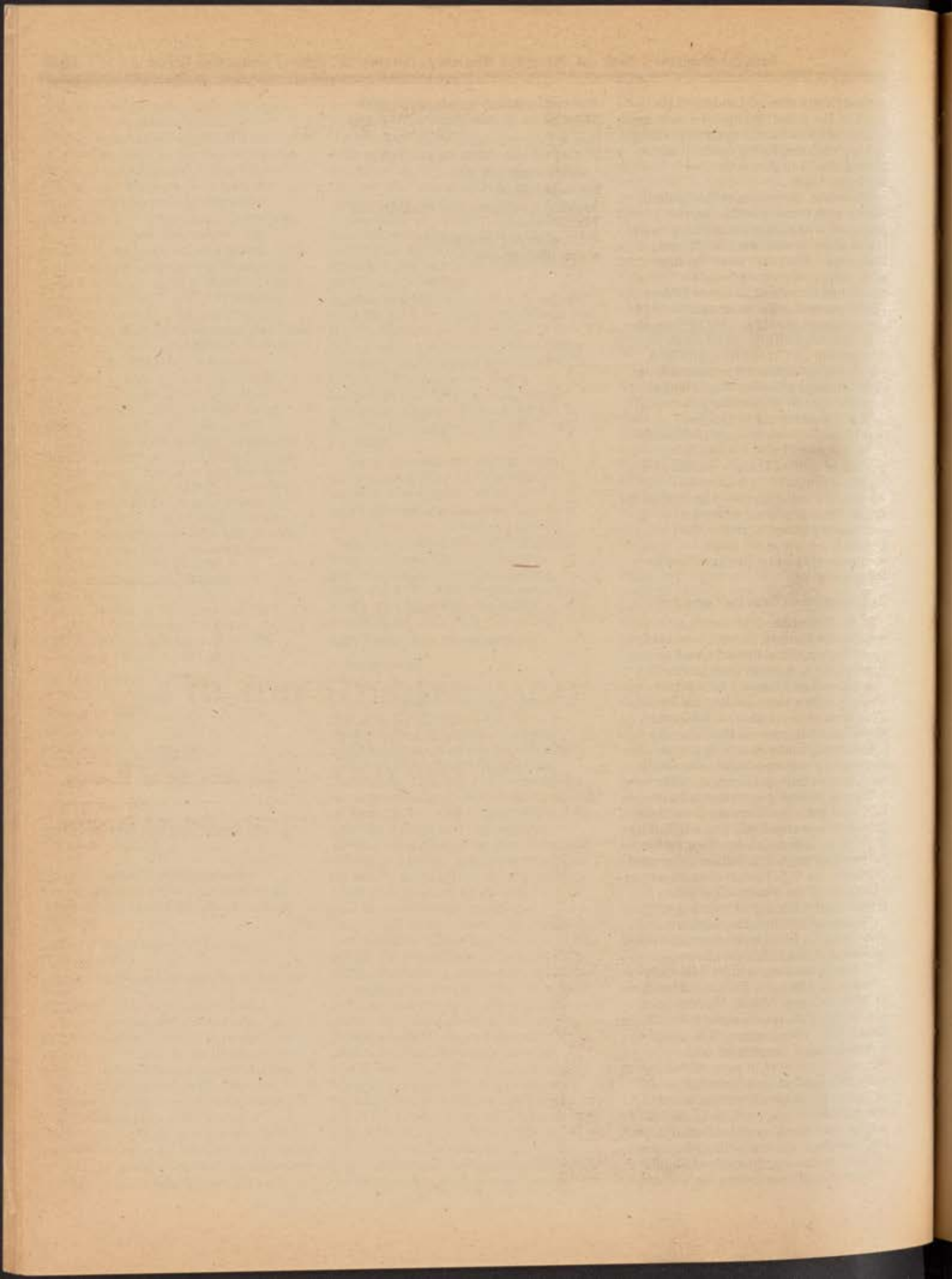
Dated: January 19, 1981.

Steven D. Jellinek,

Assistant Administrator for Pesticides and Toxic Substances.

[FR Doc. 81-2853 Filed 1-26-81; 8:45 am]

BILLING CODE 6560-31-M



Test Report Federal Register

Tuesday
January 27, 1981

Part XII

Department of Energy

Office of Conservation and Solar Energy

Residential Conservation Service Program

DEPARTMENT OF ENERGY

Office of Conservation and Solar Energy

10 CFR Part 456

[Docket No. CAS-RM-79-101]

Residential Conservation Service Program

AGENCY: Department of Energy.

ACTION: Proposed amendments and public hearing.

SUMMARY: The Department of Energy (DOE) is proposing alternative amendments to the Residential Conservation Service (RCS) program regulations (10 CFR Part 456) as they relate to the treatment of urea-formaldehyde foam insulation. The RCS program was established pursuant to Title II, Part 1 of the National Energy Conservation Policy Act (NECPA) (Pub. L. 95-619, 92 Stat. 3206 *et seq.*) as amended by the Energy Security Act (ESA) (Pub. L. 96-294, 94 Stat. 611 *et seq.*). The purpose of the program is to encourage the installation of energy conservation measures and renewable resource measures, in existing houses by residential customers of larger gas and electric utilities and home heating suppliers.

On November 7, 1979, DOE issued a final rule for the RCS program (44 F.R. 64602). Included in the Final Rule were several reserved sections. A proposed rule which filled in these reserved sections and proposed additional sections was published on December 21, 1979, (44 FR 75956); two of the reserved sections relating to material and installation standards for urea-formaldehyde (U-F) foam insulation were published on an interim final basis on September 25, 1980 with an effective date of February 24, 1981. Reference to the interim final rule will refer to the September 25, 1980, rules unless otherwise specified.

In publishing the interim final rule, DOE determined that, based upon available information, it ensured a minimum level of general safety and effectiveness with respect to U-F foam. DOE noted, however, that further suggestions from the Consumer Product Safety Commission (CPSC) received after the comment period could possibly improve the interim final standard, and DOE indicated its intent to propose improvements to the standards.

On January 13, 1981, however, the CPSC voted to propose a ban on U-F foam insulation.

In light of all these developments, DOE is today proposing, in the

alternative, several amendments to improve the interim standards or a ban on the installation of U-F foam under the RCS program.

DATES: Written comments must be received by March 30, 1981, 4:30 p.m., e.s.t. in order to ensure their consideration. Requests to speak must be received by 4:30 p.m., February 11, 1981.

Public hearing: February 20, 1981 at 9:00 a.m., at 2000 M Street, N.W., Washington, D.C., Room 2105.

ADDRESSES: Comments and requests to speak at the hearing should be addressed to Carol Snipes, Department of Energy, Conservation and Solar Energy, Office of Hearings and Dockets, Mail Station 6B-025, 1000 Independence Avenue, S.W., Washington, D.C. 20585, (Phone: (202) 252-9319). See "Comment Procedures" under Supplementary Information below.

FOR FURTHER INFORMATION CONTACT:

Shelley Launey, Building Conservation Services Division, Conservation and Solar Energy, 1000 Independence Avenue, S.W., Room GH-068, Washington, D.C. 20585, (202) 252-1660.

Daniel T. Ruge, Office of General Counsel, Department of Energy, 1000 Independence Avenue, S.W., 6B-128, Washington, D.C. 20585, (202) 252-9519.

SUPPLEMENTARY INFORMATION:

- I. Introduction.
- II. Background.
- III. Regulatory Analysis and Urban Impact Assessment.
- IV. Environmental Impact Statement.
- V. Consultation with Other Federal Agencies.
- VI. Contractor Contributions to the Rulemaking.
- VII. Comment and Hearing Procedures.
- VIII. Proposed Amendments.

I. Introduction

Interim final standards for urea-formaldehyde foam (U-F) insulation, relating both to its manufacture and to its installation under the Residential Conservation Service (RCS) program, were published September 25, 1980 (45 FR 63786). These interim standards in the absence of other regulatory action by DOE, become effective on February 24, 1981. The Department of Energy (DOE or Department) is proposing, in the alternative, to amend the interim final standards for U-F foam insulation (10 CFR 456.810 and 456.909) or to eliminate the product from use under the RCS program altogether.

II. Background**A. Summary**

The National Energy Conservation Policy Act (NECPA) requires the Secretary to develop any material and installation standards determined necessary to ensure the general safety and effectiveness of materials installed under the RCS program. DOE published interim final standards for U-F foam rather than final standards on September 25, 1980. We recognized that there was much we do not yet know about the chemistry of the product and that as our understanding of U-F foam increased, changes to the standards would probably be justified.

In fact, after the close of the comment period on the proposed standards, the CPSC suggested several changes to the U-F foam standards. Subsequently, on January 13, 1981, the CPSC voted to propose a nationwide ban on U-F foam insulation.

Accordingly, the Department today is proposing either to make certain changes to the standards, frequently along the lines earlier suggested by the CPSC, or to preclude the use of U-F foam under the RCS program.

In making these proposals, DOE intends to provide the opportunity to take that action, supported by the record, that best serves the public interest. While information currently available to DOE does not contradict our determination made in promulgating the interim standards, that those standards assure at least a minimum level of general safety and effectiveness, the CPSC has indicated that it has new information relating to chronic risk of injury from U-F foam. Moreover, DOE cannot ignore the formal proposal to ban U-F foam by the primary government agency responsible for health and safety in consumer goods. Consequently, DOE is also proposing a ban on U-F foam in the RCS program. DOE is proceeding at the same time to propose amendments to improve the interim standards. These proposals, which DOE believes would significantly improve the standards, are based on DOE's continuing studies and recommendations made by the CPSC after the close of the comment period in the last proceeding on U-F foam. If the record supports DOE's tentative conclusion on these proposals, DOE would adopt them *unless*, on the basis of the record, DOE is convinced that despite these improvements the standards for U-F foam do not assure at least a minimum level of general safety and effectiveness. In that regard, DOE will reassess the conclusions reached in adopting the interim final rule as well as consider any new information. Since the

RCS program is already beginning to operate in several States, the Department believes that it is important to preserve the one safeguard against the potential problems of U-F foam insulation which can be assured by February 24. This safeguard is, of course, at least minimum material and installation standards for U-F foam insulation.

The Department wishes to emphasize that the action it is taking today is not intended in any way to detract from the deliberations of the CPSC on U-F foam insulation. The Department still maintains that any more restrictive final regulatory action taken by the CPSC will supersede our U-F foam standards. Moreover, we will reassess our regulations on U-F foam at any time that our ongoing dialogue with the CPSC indicates that it is appropriate for us to do so. Finally, if necessary, DOE could take emergency regulatory action to ban U-F foam from the RCS program at any time it believes that safety and health require such action.

Following below is a description of the proposed amendments to the standards. Even where DOE has not included CPSC suggestions in the proposed regulatory language, the DOE will include them in the amended standards, if they are justified by the public comments in response to this notice and relevant information otherwise available to the Department.

B. Proposed Amendments to the Interim Final Material Standard for Urea-formaldehyde (U-F) Foam Insulation

1. *Limitation on methylol content in resin.* At the suggestion of CPSC, DOE considered proposing a limitation on the combined content of formaldehyde and methylol in U-F foam resin. This combined limitation would replace the current limitation on only the formaldehyde content of the resin. New evidence suggested that limiting only formaldehyde content may be counter-productive for two reasons. First, durability of the foam may be reduced. Equally important, however, is the relationship between urea, formaldehyde, and methylol in the foam. Methylol is a component of the polymer resulting from the bonding of urea and formaldehyde molecules. Under certain temperature and humidity conditions which cannot always be predicted, methylol may contribute to release of formaldehyde vapors. Although limiting the formaldehyde content in the resin may be effective in limiting the potential for initial off-gassing of formaldehyde vapors, it may not be effective in limiting the potential for release of long-term or hydrolyzable formaldehyde

which is formed after the installation of the U-F foam insulation. It was suggested that by limiting the combined content of formaldehyde and methylol a more complete chemical control of the resin may be provided, resulting in reduced potential for off-gassing.

However, DOE has decided not to propose a limitation on combined methylol and formaldehyde content because of the following reasons:

(1) We are unaware of a method to extract methylol separately from other U-F foam components. Nor are we aware of evidence to support a specific acceptable content of methylol;

(2) We know of no evidence to document a relationship between methylol content and off-gassing. Although a knowledge of the chemical bonding characteristics of U-F foam components suggests that such a relationship should exist, no one has yet demonstrated the relationship in either the laboratory or the field.

The test procedure contained in § 456.810(d)(6) of the Interim Final Rule measures in actuality, not only free formaldehyde, but also extractable methylol and other aldehydes. Extractable methylol is but a portion of the total methylol content, but is the only portion for which a procedure is available to remove it from U-F foam components other than the aldehydes. DOE is therefore changing the title of the test procedure in § 456.810(d)(6) from "Free Formaldehyde Content" to "Extractable Methylol and Aldehyde Content (including formaldehyde)". Since methylol undoubtedly contributes to the content of extractable formaldehyde in the resin and fresh foam, DOE will retain the percentage weight limitations of the total formaldehyde content (including extractable methylol) in resin and fresh foam. Extractable methylol and aldehyde content will continue to be limited to 0.5 percent by weight in the resin and 0.3 percent by weight in the fresh foam. (See Amendment 4.)

DOE specifically requests comments on the following:

- What evidence exists to show that U-F foam with low formaldehyde and methylol content results in low formaldehyde release?
- What is the relationship between methylol content and formaldehyde release? and
- What experience have manufacturers had in experimenting with low formaldehyde and methylol content in resulting foam quality?

2. *Test procedure for determining formaldehyde content of fresh foam.* The interim final material standard (§ 456.810(f)(8)) requires that the

formaldehyde content of resin be determined 15 minutes after foaming. If the potential exists for releasing additional formaldehyde after initial foaming, the formaldehyde content should be measured at intervals after initial foaming. The free formaldehyde measured immediately after foaming may be more akin to unreacted formaldehyde in the resin than formaldehyde in the cured foam because the reaction has progressed only slightly and may take longer to reach completion. CPSC, therefore, requested that DOE also measure formaldehyde content at about 3 weeks and 2 months after initial foaming. As a result, DOE is proposing that extractable methylol and aldehyde (including formaldehyde) in the fresh foam be measured 15 minutes, 2 weeks, and 56 days after foaming. Although there is little data to substantiate the 2-week and 56-day test period, decay curves developed at the University of Iowa show that formaldehyde content flattened out at approximately 6-10 days. Two weeks is proposed as a testing point to provide sufficient opportunity for this segment of the curve to be reached. Fifty-six days is also proposed as a testing point because it is an identical time period to that in the corrosion test described in § 456.810(f)(4). Although it is currently unknown if a relationship between formaldehyde release and time exists, work is progressing at the University of Iowa under contract to DOE to determine if such a relationship can be established.

DOE is proposing that the samples be held at ambient laboratory conditions of $24 \pm 5^\circ\text{C}$ ($75 \pm 10^\circ\text{F}$) and $50 \pm 10\%$ rh. In addition, DOE is proposing that the original sample be foamed at the upper and lower tolerance limits of the component ratios as recommended by the manufacturer, as well as at the recommended ratio. This will help ensure that even if the applicator has not adjusted his equipment optimally, excessive additional formaldehyde formation is still unlikely. (See Amendment 11.) DOE specifically requests comments on the following issues: (1) What are the relative advantages and disadvantages of conducting the test at ambient laboratory conditions rather than at temperatures which may be encountered in an actual installation? (2) Will laboratory results under ambient conditions reflect results in the field? (3) What effect will testing after 2 weeks and 56 days have on the cost of laboratory testing? (4) What should be an allowable level of formaldehyde 56 days after foaming? Should it be the

same as is measured 15 minutes after foaming?

3. *C-13 NMR (Nuclear Magnetic Resonance) Resin Testing.* Testing of U-F foam insulation is particularly complex because conditions and components may change from batch to batch, and depending upon the capacity of the manufacturer, hundreds of batches could be produced between testing by the independent laboratory. This means that test results on one batch of material may not necessarily reflect the results of another batch which was not tested. For purposes of this standard, a batch is presently defined as the type and amount of specific ingredients combined at one time to form U-F foam resin and foaming agent.

The Consumer Product Safety Commission (CPSC) suggested that C-13 testing might be used to ensure that each batch of material contained the same chemical components as the batch tested by the independent laboratory. Although it is unlikely that C-13 testing could detect specific amounts of each component, it could detect new additives or it could determine if there was a departure from the chemical components submitted for laboratory testing. DOE stated in the preamble to the Interim Final U-F foam standard that we intended to propose that each manufacturer submit for testing a sample of resin from each batch of material manufactured. CPSC estimated that the cost of each analysis would range from \$.50 to \$2.00.

DOE has had opportunity in the meantime to examine C-13 testing more closely and has determined that application of C-13 NMR testing to U-F foam resins is premature in the context of a product standard for the following reasons:

(1) No specification for instrument parameters exists for performing the C-13 NMR analysis on U-F resins, and as a result, intensity variations in the readings may occur. Reproducibility errors range from 10-15 percent under ideal circumstances. Possible causes for intensity variations include the following:

- The RF power may not be sufficiently powerful to irradiate all nuclei equally.
- The C-13 NMR equipment may not have sufficient storage or data points to completely define resonance intensities.
- The carbon atoms in a molecule may have relaxation times which are widely variant.

(2) The method of quantitative analysis of resins is very complicated. The resonance peaks of the methylol and other functional groups are either

broad and/or overlap with other resonance peaks. The lack of resolution resulting from different chain lengths and multiple structures within the resin probably will lead to large errors of determination.

(3) Timing is of critical importance in obtaining an accurate analysis. After production of the U-F foam resin, the urea-formaldehyde polymer continues to react at a slow rate. If samples are sent great distances and if holding times for shipping and analysis are long, then the formaldehyde and methylol content of that particular batch, as determined by the C-13 analysis, may not be representative of that batch. Because the resin continues to react on standing, it would be necessary for each manufacturer to ensure that all samples are analyzed rapidly. DOE does not believe that manufacturers will have sufficient control over shipping, storage, and analysis of samples from every batch to ensure the necessary immediate analysis.

(4) When CPSC suggested C-13 NMR testing they estimated that it could be conducted for \$.50-\$2.00. A limited survey conducted by DOE shows that the cost may be more in the order of 20 to 100 times that estimate. And these prices may or may not include analysis. It is questionable whether C-13 NMR testing apparatus will be allowed to be used for long periods of time for resin testing, or, if so, at what price. In a paper presented by B. Everett of CIBA-Geigy Plastics Division, at the NBS Technical Workshop on Formaldehyde, April 9-11, 1980, sponsored by CPSC, the C-13 NMR spectra of urea-formaldehyde resins were described. The spectrum obtained under the conditions described required " * * * an average experimental time of 16-18.5 hours." Given the simplest of situations, freight charges, actual laboratory analysis, and charges associated with rapid turn-around times, the cost far exceeds the \$2.00 range.

As a result of the above, DOE is of the opinion that the state-of-the-art of C-13 NMR U-F Foam resin testing is not sufficiently developed or practical for DOE to propose as a quality assurance requirement.

As a substitute for the C-13 NMR testing, DOE is proposing test procedures for determining specific gravity, pH, viscosity and extractable methylol and aldehyde in the resin. Once a manufacturer has determined the range of specific gravity, pH, viscosity, and extractable methylol and aldehyde appropriate for his product, future testing to ensure the resin is within the specified range will help to

ensure similarity of components and manufacturing process. (See Section 4.)

Although DOE currently believes C-13 testing is premature for inclusion within the standard, we solicit comments, detailed data, and other information on the applicability of its use as a criterion for judging quality control. As with all other CPSC suggestions not reflected in the proposed regulatory language, DOE will include a requirement for C-13 testing in the amended standards, if its inclusion is justified by public comments and other relevant materials.

We also request comments on other techniques used by manufacturers to help ensure quality control in this area.

4. *Additional Quality Control Test Procedures (Including Specific Gravity, Viscosity, pH, and Extractable Methylol and Aldehydes.)* Quality control of the production of urea-formaldehyde resins is essential to assure that unacceptable resins which would result in poor quality foam are not distributed to applicators. Quality control of resin production means that physical and chemical properties of the freshly-produced resins are the same from batch to batch. Production of the resin should be consistent. Important properties to measure for controlling the quality of urea-formaldehyde resins are viscosity, specific gravity, pH, and extractable methylol and aldehyde content. The significance of measuring each of the properties is as follows:

• *Viscosity and Specific Gravity.* These properties are an indication of the degree of reaction between the urea and formaldehyde chemicals and that the chemical reaction has proceeded as designed. The chemical reaction and its degree should be the same from batch to batch of resin. Variations in these properties from batch to batch may be an indication that the products of reaction are not the same from batch to batch.

• *pH.* In the production of U-F resins, the catalyzed reaction mixture containing urea, formaldehyde and other chemicals is essentially neutralized at a certain point in the reaction. The neutralization quenches the reaction between the urea and formaldehyde before polymerization is complete. The partially polymerized resin is shipped to job sites where polymerization is reinitiated in the application process to produce the foam insulation. Proper neutralization of the original reaction mixture is essential to attain a resin which may be satisfactorily applied and have proper self-life. For this reason, the pH of each batch of resin should be similar.

• *Extractable Methylol and Aldehyde Content.* Measurement of this property

of the resin is proposed to determine that the extractable methylol and aldehyde content of each batch of resin does not exceed a tolerance limit established by the manufacturer. In addition, this limit must be at or below the limit established in section (d)(6)(i) of DOE Interim Standard § 456.810. The extractable methylol and aldehyde content in the resin may be another indication that the reaction between urea and formaldehyde has proceeded as designed. In this regard, the extractable methylol and aldehyde content in the resin should not vary significantly from the manufacturer's specified value.

Manufacturers should have their own specification values for these properties, since they are expected to vary between manufacturers. DOE is proposing that manufacturers test each freshly-produced batch of resin to determine its viscosity, specific gravity, pH and percentage of extractable methylol and aldehyde. The results of the measurements will then be compared to the manufacturer's specified values (± 10 percent) for these properties to determine whether the new batch of resin meets the specification. Resins which do not meet the manufacturer's specification are not in compliance with the DOE standard and must not be distributed or installed under the RCS program. Results of tests should be recorded and kept for future reference. In addition, manufacturers will submit these specifications to the testing laboratory as part of the annual testing program described in § 456.810(e). Resin submitted to the laboratory which does not fall within the manufacturer's specifications constitutes noncompliance with the standard.

These properties of urea-formaldehyde resins should be determined as follows:

- *Viscosity*—The viscosity should be determined according to the procedure given in ASTM D2393.

- *Specific gravity*—The specific gravity should be determined according to the procedure described in sections 12 and 13 of ASTM D1045.

- *pH*—The pH should be determined using a standard laboratory pH meter. The pH meter should be calibrated using a standard buffer solution of 7.0 before each determination of resin pH.

- *Extractable methylol and aldehyde*—The extractable methylol and aldehyde content should be determined by using the standard test method in § 456.810(f)(7). (See Amendments 4 & 5.)

5. *Testing by a NVLAP accredited laboratory.* In the interim final standard, DOE required that all testing be done by

an independent laboratory (§ 456.810(e)) to ensure compliance with the applicable standard. Because testing capability can vary considerably from laboratory to laboratory, DOE is proposing that the provision be amended to require testing by an independent accredited laboratory under the National Voluntary Laboratory Accreditation Program (NVLAP). In the event that there are not any laboratories certified to perform a particular test, the present requirement that an independent laboratory perform the test will still pertain.

NVLAP was established by the Department of Commerce to ensure that certain laboratories are technically qualified to conduct specific test methods. NVLAP only concerns itself with products and test methods which an industry or Government group requests be included in the program. NVLAP does not currently accredit laboratories to conduct *all* of the test methods contained in the Interim Final Rule under § 456.810(d) and (g). Only the test methods for determining a material's thermal resistivity by ASTM C177, ASTM C518, or ASTM C236, surface burning characteristics by ASTM E84 and dry density by ASTM D1622 are presently included. DOE has requested that all other test methods in § 456.810 be included in the thermal insulation laboratory accreditation program. (See Amendment 9.)

Procedures are published in the Federal Register notice of January 23, 1980 (45 FR 5572) explaining how interested laboratories may apply for accreditation and the necessary requirements. NVLAP does not require that all laboratories be accredited to conduct all test methods but rather laboratories can choose only those test methods they wish to be accredited to perform. Further information is available from:

John W. Locke, Coordinator NVLAP, Room 3876, U.S. Department of Commerce, Washington, D.C. 20230 (202) 377-2054.

6. *Shipping/Storage Conditions.* DOE is concerned that temperature conditions after manufacture and prior to installation do not affect the chemistry of the resin and foaming agent and result in shortened shelf-life beyond that anticipated by the manufacturer. U-F foam components subjected to excessively high or low temperatures will result in foam which does not set properly. Because components exposed to very low temperature, (below freezing) appear to recover once they gradually increase in temperature, DOE is proposing to limit temperature at only the upper end. DOE is proposing that

manufacturers, distributors, and contractors store U-F foam components only in conditioned spaces kept at or below 26° C (80° F). This requirement will help ensure that U-F foam components do not prematurely deteriorate while in the hand of manufacturers, distributors, or contractors.

Similar restrictions could be placed on the shipping and handling of U-F foam components between manufacturers, distributors and contractors. The chance of components being exposed to high temperatures during transit is particularly high under certain circumstances and therefore a control on shipping conditions would be helpful. However, DOE could not determine an effective means to accomplish this without creating undue burden for the shipper, manufacturer, or distributor, and without seriously increasing the price of U-F foam to the consumer. Refrigerated trucks and freight cars are available but are costly to operate.

Another suggestion made, by CPSC, to DOE was to outfit each container of resin or foaming agent with temperature recording devices during shipping. Based on the record of temperatures to which components were subjected, the remaining shelf-life could then be adjusted. However, to date, DOE has been unable to identify any such device commercially available and applicable to containers used to ship and store U-F foam components. DOE requests comments or suggestions on procedures which could be followed during shipping to ensure the product quality and durability. (See Amendment 8).

7. *Equipment Modifications.* Because installation equipment plays such an important role in the quality of U-F foam application, DOE is proposing several modifications or additions to the equipment requirements in § 456.810(g), at the suggestion of CPSC.

First, DOE proposes that all equipment used to install U-F foam be capable of automatically recirculating and agitating resins and foaming agents continuously throughout the foaming process. This requirement should help maintain uniformity of components and help ensure that no chemical separation occurs and that no temperature gradient builds up during installation. (See Amendment 14).

Second, DOE proposes that compressed bottled gas (only air or nitrogen) be used in place of air compressors. DOE is specifying what gases should be used in order to avoid the use of propane, butane, oxygen or other bottled gases which could result in a hazardous situation for installer and homeowners alike. Oil contamination

from air compressors may cause foam to collapse and result in greater shrinkage of the foam. Bottled gas will eliminate the possibility of oil contamination, and cause less pressure fluctuations. (See Amendment 14.)

Third, DOE proposes that all equipment used to install U-F foam insulation respond by automatic shut down within 10 seconds to any drop in regulated gas pressure or to a 20 percent change in component ratios. DOE has been informed that equipment meeting these specifications is commercially available. (See Amendment 14.)

In the Interim Final Rule, equipment that either automatically shutdown or alarmed on a 20 percent change in component ratio could be used for foam installation. However, DOE now feels that the foaming process should cease when such a ratio change occurs to prevent any installation of poor quality foam. In the event of operator ignorance or neglect, large amounts of poor quality foam could be installed which would be very difficult to remove. Therefore, a change is being proposed to allow only equipment which has an automatic shutdown. Under the proposed amendment, equipment with an alarm and an automatic shutdown is permissible but equipment having only an alarm is not.

As specified in the Interim Final Rule in § 456.909(f) only equipment recommended by the foam manufacturer can be used with the manufactured product. This requirement is also being added to the material standard under equipment requirements in § 456.810(g)(1). By adding this requirement here, the combination of it along with new provisions proposed herein will provide a complete and clear listing of all equipment requirements. (See Amendment 14.)

Once equipment is designed for installing U-F foam insulation, two situations arise which impact the quality of the installation. The first situation pertains to the capability of the equipment to consistently sustain the correct component ratio during the entire foaming process. DOE is proposing that the test found in the interim standard § 456.810(g) be done by an accredited laboratory for each model type of equipment before the manufacturer can certify its use by installers in the field. This test verifies the stability of the equipment to maintain correct component ratio under various conditions, namely, continuous pumping of 20 ± 5 gallons of each component and ten on-off cycles. This requirement would ensure that only equipment of adequate quality would be used in the field and would provide a

high level of confidence that the correct component ratio is being maintained during an actual installation. Twenty gallons of resin represents approximately one-half of the total volume needed for an average size house. (See Amendment 14.)

The second situation arises once the equipment is in the hands of the installer. Periodic inspections of the equipment and recalibration of the pressure gauges and other indicating devices are important to ensure a correct foam product for each installation by the installer. DOE is proposing that each piece of equipment be inspected, refurbished and calibrated to the original manufacturer's specifications by the manufacturer or independent facility every 6 months. In particular, the nozzle orifice size would be checked for correct dimension and the applicator passages would be cleaned of any obstructions. Likewise, all pressure gauges, indicating devices, alarms, and automatic shutdown switches would be checked and calibrated. Correct overall operation of the equipment would be verified. (See Amendment 28.)

As evidenced by comments following the publication of the Interim Final Rule, clarification is needed to explain the various tolerance limits placed on the equipment concerning the allowable change in component ratio. DOE is proposing that equipment of each model type be able to satisfy the test in paragraph § 456.810(g) to within ± 5 percent tolerance of the manufacturer's prescribed ratio. We are also proposing that equipment automatically shutdown anytime there is a ± 20 percent change in the component ratio during installation. The discrepancy between these two tolerances (5 and 20 percent) is not critical because two separate situations are involved. The first requirement (± 5 percent) is a guideline to ensure that each model type of equipment sold to installers is manufactured with the designed capability of consistently producing foam with the correct component ratio. The actual tolerance is determined directly by measuring the quantity of each component at the beginning and end of the test. The second requirement (± 20 percent) provides a broader limit than the first which results in greater equipment stability during an installation. Since the foam's component ratio cannot be checked on a continuous basis while being installed, equipment manufacturers have relied on a ratio of component pressures for an indication of component ratio. Since the ratio is determined indirectly, a broader

tolerance limit is justified. Nevertheless, DOE feels that this 20 percent tolerance as indicated by the pressure device ensures a sufficient level of quality for the foam. Further, it reduces the possibility of causing needless and frequent shutdowns due to expected fluctuations in component pressures during installation.

III. Regulatory Analysis and Urban Impact Assessment

The President by Executive Order 12044 has directed agencies of the executive branch to conduct a Regulatory Analysis of regulations which they prepared that are likely to have a major economic impact. In accordance with OMB Circular A-115, an Urban Community Impact Assessment should be prepared when the Proposed Rule is a major policy and program initiative. This assessment should be incorporated into the Regulatory Analysis.

DOE determined that the Residential Conservation Service program, authorized under Title II, Part 1 of the National Energy Conservation Policy Act, was a major action which required preparation of Regulatory Analysis and an Urban and Community Impact Assessment. Consequently, the Department prepared the two analyses in draft in conjunction with the Final Rule which was published November 7, 1979 (44 FR 64602). The final Regulatory Analysis, which incorporates the final Urban and Community Impact Assessment, include analysis of the Interim Final Rule and the amendments proposed herein.

A single copy of the Final Regulatory Analysis may be obtained by writing: Mr. James R. Tanck, Director, Building Conservation Services Division, Department of Energy, Conservation and Solar Energy, 1000 Independence Avenue, S.W., Room GH-068, Washington, D.C. 20585.

While this Regulatory Analysis addresses most of the issues required to be addressed by the Regulatory Flexibility Act of 1980, DOE has determined that the requirements of that Act do not apply to this proposed rule, because the number of small businesses that may be significantly affected is not substantial.

IV. Environment Impact Statement

In accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA, 42 U.S.C. 4321 *et seq.*) DOE prepared an Environmental Impact Statement for the entire Residential Conservation Service Program. The subject matter of this rulemaking was evaluated in the

programmatic Environmental Impact Statement (DOE/EIS-0050) and was published in the *Federal Register* on November 7, 1979 (44 FR 64602). A copy may be obtained by writing: Mr. James R. Tanck, Director, Building Conservation Services Division, Conservation and Solar Energy, 1000 Independence Avenue, S.W., Room GH-068, Washington, D.C. 20585.

V. Consultation With Other Federal Agencies

In preparing these proposal amendments, DOE consulted with representatives of the National Bureau of Standards.

VI. Contractor Contributions to the Rulemaking

The Institute of Agricultural Medicine and Environmental Health of the University of Iowa assisted in the development of the proposed amendments.

VII. Comment and Hearing Procedures

A. Written Comments

Interested persons are invited to participate in this rulemaking by submitting data, views, or arguments, with respect to the proposed procedures, requirements and criteria. Comments should be submitted to the addresses indicated in the addresses section of this preamble and should be identified on the envelope and on the documents submitted to DOE with the designation "Residential Conservation Service Program, (Docket No. CAS-RM-79-101)." Fifteen copies should be submitted. All written comments must be received by 60 days from date of publication 4:30 p.m. e.s.t., to ensure consideration.

All written comments received on the Proposed Rule will be available for public inspection in the DOE Reading Room, Room 1E-190, Forrestal Building, 1000 Independence Avenue, S.W., Washington, D.C., between the hours of 8:00 a.m., and 4:00 p.m., Monday through Friday. Any information of data considered by the person furnishing it to be confidential must be so identified and one copy submitted in writing. DOE reserves the right to determine the confidential status of the information of data and treat it according to its determination.

B. Hearing Procedure

The time and place of the public hearing are indicated in the date and addresses section of this preamble. DOE invites any person who has an interest in the proposed rulemaking issued today, or who is representative of a

group of class of persons that has an interest in the proposed rulemaking, to make a written request for an opportunity to make an oral presentation. Such a request should be directed to the address indicated in the addresses section of this preamble, and must be received before 4:30 p.m., on February 11, 1981.

Such a request may be hand delivered to Room 1F-085, 1000 Independence Avenue, S.W., Washington, D.C. 20585, between the hours 8:00 a.m., and 4:30 p.m., Monday through Friday. A request should be labeled both on the document and on the envelope "Residential Conservation Service Program", Docket No. CAS-RM-79-101.

The person making the request should briefly describe the interest concerned; if appropriate, state why he or she is a proper representative of a group or class of persons that has such an interest; and give a concise summary of the proposed oral presentation and a telephone number where she or he may be contacted during the day.

Each person who, in DOE's judgment, proposes to present relevant material and information shall be selected to be heard and shall be notified by DOE of his or her participation before 4:30 p.m., on February 17, 1981.

Persons selected to appear at the hearing should bring 15 copies of his or her statement to the hearing site.

The hearing will begin at 9:00 a.m., e.s.t., on February 20, 1981, Room 2105, 2000 M Street, N.W., Washington, D.C.

C. Conduct of Hearing

DOE reserves the right to arrange the schedule of presentations to be heard and to establish the procedures governing the conduct of the hearing. The length of each presentation may be limited, based on the number of persons requesting to be heard. A DOE official will be designated as presiding officer to chair the hearing. Questions may be asked only by those conducting the hearing, and there will be no cross-examination of persons presenting statements.

Any participant who wishes to ask a question at the hearing may submit the question, in writing, at the registration desk. The presiding officer will determine whether the question is relevant, and whether the time limitations permit it to be presented for answer.

Any further procedural rules needed for the proper conduct of the hearing will be announced by the presiding officer.

A transcript of the hearing will be made, and the entire record of the hearing, including the transcripts, will

be retained by DOE and made available for inspection at the DOE Freedom of Information Reading Room, Room 1E-190, Forrestal Building, 1000 Independence Avenue, S.W., Washington, D.C. 20585, between the hours of 8:00 a.m., and 4:00 p.m., Monday through Friday. Any person may purchase a copy of the transcript from the reporter.

Authority: Part 1 of Title II of the National Energy Conservation Policy Act, Pub. L. 95-619, 92 Stat. 3208 *et seq.*, as amended by Title V, Subtitle B of the Energy Security Act, Pub. L. 96-294, 94 Stat. 611 *et seq.*; Department of Energy Act, Pub. L. 95-619, 91 Stat. 565 *et seq.*, 42 U.S.C. 7101 *et seq.*

In consideration of the foregoing, the Department of Energy proposes to amend Title 10, Chapter II, Part 456 of the Code of Federal Regulations, as set forth below.

Issued in Washington, D.C., January 19, 1981.

T. E. Stelson,

Assistant Secretary, Conservation and Solar Energy.

Title 10, Chapter II, Part 456 of the Code of Federal Regulations is amended as follows:

A. Primary Proposals

§ 456.810 [Amended]

1. On page 64793, second column, after § 456.810(b)(6), insert a new paragraph (7) to read as follows and renumber the subsequent paragraphs: (7) "Accredited Laboratory" means a laboratory whose ability to perform certain test methods on thermal insulation materials has been approved by the U.S. Department of Commerce under the National Voluntary Laboratory Accreditation Program (NVLAP).

2. On page 63793, second column, § 456.810(b), after the definition of "ASTM D257-76" insert a new paragraph as follows: (14) "ASTM D1045-72" means ASTM Standard Method of Sampling and Testing Plasticizers Used in Plastics.

3. On page 63793, second column, § 456.810(b), after the definition of "ASTM D1622-63" insert a new paragraph as follows: (16) "ASTM D2393-72" means ASTM Standard Test Method for Viscosity of Epoxy Resins and Related Components.

4. On page 63793, third column, § 456.810(d)(6) delete paragraph (d)(6) and insert in lieu thereof a new paragraph (d)(6) as follows: (6) *Extractable methylol and aldehyde content.* (i) The extractable methylol and aldehyde content of the resin (including formaldehyde) used in U-F foam insulation shall be determined in accordance with the procedure in

paragraph (f)(7). The percent by weight, however, shall not exceed 0.5 percent. Values determined by manufacturers shall be submitted as part of the annual laboratory retesting program. The laboratory shall ensure that the percentage by weight of the test samples is within ± 10 percent of the manufacturer's specification. (ii) The extractable methylol and aldehyde content of the fresh foam (including formaldehyde) shall not exceed 0.3 percent by weight when tested as specified in paragraph (f)(8).

5. On page 63793, third column, after paragraph (d)(6) insert new paragraphs (d)(7), (d)(8) and (d)(9) as follows and renumber existing paragraphs (d) (7) thru (13) accordingly: (7) *Viscosity*. The viscosity of U-F foam resin shall be determined by the manufacturer in accordance with ASTM D2393-72. The manufacturer shall then submit this value to the laboratory conducting the manufacturer's annual retesting program and also to all qualified installers. The laboratory shall ensure that the sample being tested is within ± 10 percent of the manufacturer's specified viscosity.

(8) *Specific Gravity*. The specific gravity of U-F foam resin shall be determined in accordance with section 12 and 13 of ASTM D1045-72 by the manufacturer. The manufacturer shall then submit this value to the laboratory conducting the manufacturer's annual retesting program and also to all qualified installers. The laboratory shall ensure that the sample being tested is within ± 10 percent of the manufacturer's specific gravity. (9) *pH*. The pH of U-F foam resin shall be determined by the manufacturers using a standard laboratory pH meter calibrated with standard buffer solution of 7.0 before each determination. The manufacturers shall then submit this value to the laboratory conducting the manufacturer's annual retesting program, and also to all qualified installers. The laboratory shall then ensure that the sample being tested is within ± 10 percent of the manufacturer's specified value.

6. On page 63794, third column, § 456.810(d)(13)(iii), delete the last sentence of paragraph (13)(iii) and insert in lieu thereof the following: During the on-site inspection, the manufacturer shall ensure proper functioning of the installer's equipment.

7. On page 63794, third column, § 456.810(d)(13)(iv), insert after the first occurrence of the word "equipment" the words "model type"; and delete in the first sentence "the equipment manufacturer" and insert in lieu thereof "an paragraphs (d)(7), (d)(8) and (d)(9) as follows and renumber existing

paragraphs (d) (7) thru (13) accordingly: (7) *Viscosity*. The viscosity of U-F foam resin shall be determined by the manufacturer in accordance with ASTM D2393-72. The manufacturer shall then submit this value to the laboratory conducting the manufacturer's annual retesting program and also to all qualified installers. The laboratory shall ensure that the sample being tested is within ± 10 percent of the manufacturer's specified viscosity. (8) *Specific Gravity*. The specific gravity of U-F foam resin shall be determined in accordance with section 12 and 13 of ASTM D1045-72 by the manufacturer. The manufacturer shall then submit this value to the laboratory conducting the manufacturer's annual retesting program and also to all qualified installers. The laboratory shall ensure that the sample being tested is within ± 10 percent of the manufacturer's specific gravity. (9) *pH*. The pH of U-F foam resin shall be determined by the manufacturers using a standard laboratory pH meter calibrated with standard buffer solution of 7.0 before each determination. The manufacturers shall then submit this value to the laboratory conducting the manufacturer's annual retesting program and also to all qualified installers. The laboratory shall then ensure that the sample being tested is within ± 10 percent of the manufacturer's specified value.

6. On page 63794, third column, § 456.810(d)(13)(iii), delete the last sentence of paragraph (13)(iii) and insert in lieu thereof the following: During the on-site inspection, the manufacturer shall ensure proper functioning of the installer's equipment.

7. On page 63794, third column, § 456.810(d)(13)(iv), insert after the first occurrence of the word "equipment" the words "model type"; and delete in the first sentence "the equipment manufacturer" and insert in lieu thereof "an accredited laboratory."

8. On page 63794, third column, following § 456.810(d)(13), insert a new paragraph as follows: (14) *Storage Requirements*. All U-F foam components shall be stored in a conditioned space which does not exceed 26°C (80°F) during all phases of manufacture and storage.

9. On page 63794, third column, § 456.810, remove paragraph (e) and insert in lieu thereof a new paragraph (e) as follows:

(e) *Laboratory testing*. To ensure compliance with these standards, the manufacturer shall have a continuing annual program of retesting by an independent accredited laboratory, except that in the event that there are no independent accredited laboratories to

perform a particular test, the test shall be performed by an independent laboratory. Laboratory testing must include all the material test methods specified in paragraph (f). The test values obtained by the manufacturer using the test procedures described in paragraph (d)(6), (d)(7), (d)(8), and (d)(9) shall be supplied by the manufacturer to the testing laboratory prior to laboratory testing. Laboratory results must be available for examination by the Department of Energy upon request.

10. On page 63800, third column, § 456.810(f)(7), remove the paragraph designation and replace with the following designation: (7) *Test methods for extractable methylol and aldehyde content (including formaldehyde) of resin*. Also, on page 63801, first column, revise the formula as follows:

"Percentage extractable methylol and aldehyde = $3(A-B) D/C$ "

11. On page 63801, first column, § 456.810(f)(8), revise the first paragraph as follows:

(8) *Test method for extractable methylol and aldehyde content (including formaldehyde of fresh urea formaldehyde foam)*. The test shall be conducted on three foam specimens foamed at the manufacturer's recommended equipment setting taken from the same slab of foam and one blank. In addition, the same test shall be conducted on six additional foam specimens: three foamed at the lower tolerance limit of component ratio and three foamed at the upper tolerance limit of component ratio. These specimens shall be collected 15 minutes after foaming. Produce a cone of foam and allow it to set at ambient temperature and relative humidity for 15 minutes, but not longer than 1 hour. Each of the procedures described below must be conducted within this time frame, at 2 weeks, and again at 56 days. Samples must be held at ambient laboratory conditions of $24 \pm 5^\circ\text{C}$ ($75 \pm 10^\circ\text{F}$) and 50 ± 10 percent rh in an uncovered beaker. Slice off the exterior surfaces and cut three samples for each of the test measuring about $50 \times 50 \times 75\text{mm}$ ($2 \times 2 \times 3\text{ in.}$) each weighing approximately 6 to 10 grams.

12. On page 63801, second column, § 456.810(f)(8)(vii) revise the formula as follows and remove the phrase "... the three . . ." and insert the word "all" in lieu thereof:

"Percentage extractable methylol and aldehyde = $3.003(A-B) D/C$ "

13. On page 63801, add a footnote to the formula set forth in § 456.810(f)(8)(vii) to read as follows:

** The percentage of free aldehydes is calculated as the equivalent concentration of formaldehyde. The presence of higher molecular weight aldehydes in the foam would yield a value which is greater than the concentration of formaldehyde.

14. On page 63801, third column § 456.810(g)(1), insert a new paragraph (g)(1) as follows and renumber subsequent paragraphs thereafter and insert a new sentence after the heading *Testing Requirements* as follows:

(g) *Equipment.* (1) *Equipment requirements.* (i) Only equipment which has been recommended by the manufacturer for use with the manufacturer's product shall be used.

(ii) Only equipment which automatically recirculates and agitates resins and foaming agents continuously throughout the foaming process shall be used.

(iii) Only equipment which uses compressed bottled gas (either air or nitrogen) shall be used.

(iv) Only equipment which automatically shuts down within 10 seconds of any drop in regulated gas pressure or when a 20 percent change in component ratios occurs shall be used.

(2) *Testing Requirements.* The manufacturer shall have each model type of application equipment tested by an independent accredited laboratory (see § 456.810(e) for definition of accredited) and satisfactorily perform the test specified in paragraph (g)(2)(i)-(v) below.

15. On page 63801, third column, § 456.810(g)(1)(i), amend the reference to paragraph (g)(2)(i) to read paragraph (g)(3)(i).

16. On page 63801, third column § 456.810(g)(1)(ii), amend the reference to paragraph (g)(2)(i) to read paragraph (g)(3)(i).

17. On page 63802, first column, § 456.810(g)(1)(iv), amend the reference to paragraph (g)(2)(iii) to read paragraph (g)(3)(iii).

18. On page 63802, first column, § 456.810(g)(1)(iv), amend both references to paragraph (g)(2)(i) to read paragraph (g)(3)(i).

19. On page 63802, first column, § 456.810(g)(1)(iv), remove "alarm or" in both occurrences. Also, in the last sentence insert "the" following "because of".

20. On page 63802, first column, § 456.810(g)(1)(v), amend the reference to paragraph (g)(2)(iii) to read paragraph (g)(3)(iii).

21. On page 63802, first column, § 456.810(g)(1)(iv), amend the reference to paragraph (g)(1)(iv) to read paragraph (g)(2)(iv).

22. On page 63802, first column, § 456.810(g)(2), amend the "(2)" preceding the paragraph designated *Equipment Testing Procedures* to "(3)".

23. On page 63802, first column, § 456.810(g)(2)(i), remove the phrase "alarm or".

24. On page 63802, second column, § 456.810(g)(2)(i)(E), remove the phrase "alarm or".

25. On page 63802, second column, § 456.810(g)(2)(i)(E), amend the reference to paragraph (g)(2)(iii) to read paragraph (g)(3)(iii).

26. On page 63802, second column, § 456.810(g)(2)(ii), amend the reference to paragraph (g)(2)(i) to read paragraph (g)(3)(i).

27. On page 63802, second column, § 456.810(g)(2)(ii), amend the reference to paragraph (g)(1)(v) to read paragraph (g)(2)(v).

28. On page 63802, second column, § 456.810(g)(2), at the end of the paragraph insert a new paragraph as follows:

(4) All equipment shall be inspected, refurbished and recalibrated to the original manufacturer's specifications by the manufacturer or other independent facility every 6 months. To satisfy this requirement the following must be performed:

(i) All component parts shall be thoroughly cleaned and inspected;

(ii) All physical dimensions of the equipment will be renewed to the equipment manufacturer's specifications;

(iii) All pressure gauges, indicating devices, alarms, and shutdown switches will be calibrated;

(iv) Correct operation of the equipment shall be verified.

§ 456.909 [Amended]

29. On page 63802, third column, § 456.909(d)(7), remove paragraph (7) and insert in lieu thereof a new paragraph as follows: (7) U-F foam components must be stored in a conditioned space which does not exceed 26°C (80°F), and in addition, all manufacturer's instructions for storage and for proper methods of disposal of old or unusable components must be followed.

30. On page 63802, third column § 456.909(f)(1), remove the period at the end of the sentence and insert in lieu thereof the following: and use only equipment of a model type which has been certified by an accredited laboratory.

31. On page 63803, second column, § 456.909(g)(5), add the following two paragraphs:

(viii) Determine the pH of the U-F foam resin using a standard laboratory

pH meter calibrated with a standard buffer solution of 7.0. Ensure that the pH is within ± 10 percent the manufacturer's specified value. Do not use resin which is not within this range.

(ix) Determine the viscosity of the U-F foam resin in accordance with ASTM D2393-72. Ensure that the viscosity is within ± 10 percent of the manufacturer's specified value. Do not use resin which is not within this range.

B. Alternative Proposals

§ 456.105 [Amended]

1. Sections 456.105(f)(5)-(7) are revised to read as follows:

§ 456.105 Definitions.

(f) *Energy Conservation Measures.*

(5) *Ceiling Insulation.* The term "ceiling insulation" means a material, other than urea-formaldehyde foam insulation, primarily designed to resist heat flow which is installed between the conditioned area of a building and an unconditioned attic. Where the conditioned area of a building extends to the roof, the term "ceiling insulation" also applies to such material used between the underside and upperside of the roof.

(6) *Wall Insulation.* The term "wall insulation" means a material, other than urea-formaldehyde foam insulation, primarily designed to resist heat flow which is installed within or on the walls between conditioned areas of a building and unconditioned areas of a building or the outside.

(7) *Floor Insulation.* The term "floor insulation" means a material, other than urea-formaldehyde foam insulation, primarily designed to resist heat flow which is installed between the first level conditioned area of a building and an unconditioned basement, a crawl space, or the outside beneath it. Where the first level conditioned area of a building is on a ground level concrete slab, the term "floor insulation" also means such material installed around the perimeter of or on the slab. In these case of mobile homes, the term "floor insulation" also means skirting to enclose the space between the building and the ground.

§§ 456.810 and 456.909 [Removed and Reserved]

2. Sections 456.810 and 456.909 are removed and indicated as reserved.

(FR Doc. 81-2573 Filed 1-26-81; 8:45 am)

BILLING CODE 6450-01-M

10 CFR Part 456

[Docket No. CAS-RM-81-128]

Residential Conservation Service Program

AGENCY: Department of Energy.

ACTION: Notice of inquiry.

SUMMARY: The Department of Energy has implemented the Residential Conservation (RCS) Program pursuant to Part 1 of Title II of the National Energy Conservation Policy Act (NECPA), Pub. L. 95-619, 92 Stat 3206 *et seq.*, as amended by the Energy Security Act (ESA), Pub. L. 96-294, 94 Stat 611 *et seq.* The purpose of the program is to encourage the installation of energy conservation measures in existing houses by residential customers of larger gas and electric utilities and home heating suppliers.

On November 7, 1979, DOE issued a Final Rule for the RCS Program (44 FR 64602). Additional rules were issued subsequently to amend portions of the Final Rule and to complete sections which were reserved in the Final Rule.

This notice of inquiry is intended to solicit from the public suggestions for new energy conservation and renewable resource measures that might be added to the RCS Program. Criteria are set forth by which DOE plans to evaluate prospective measures and procedures for submission are delineated.

DATE: Written responses must be received by May 27, 1981, in order to ensure their consideration.

ADDRESSES: For further information contact:

Philip W. Thor, Buildings Conservation Service Division, Department of Energy, Room GH-068, 1000 Independence Avenue, S.W., Washington, D.C. 20585, (202) 252-9519.

Laura Rockwood, Office of General Counsel, Department of Energy, Room 6B-144, 1000 Independence Avenue, S.W., Washington, D.C. 20585, (202) 252-1660.

SUPPLEMENTARY INFORMATION:

- I. Introduction.
- II. Criteria.
- III. Response procedure.

I. Introduction

The Department of Energy (DOE) has implemented Part 456 of Chapter II of Title 10, Code of Federal Regulations, under the requirements of Title II, Part 1, of the National Energy Conservation Policy Act (NECPA), Pub. L. 95-619, as amended by the Energy Security Act (ESA), Pub. L. 96-294. Under Section (210)(11)(I) of NECPA, the Secretary has

the authority to identify by rule residential energy conservation measures (which includes renewable resource measures) in addition to those enumerated in section 210 of NECPA. (See Appendix A for a list of the current RCS measures.) It is the purpose of this notice to solicit from the public ideas and suggestions for new residential energy conservation and renewable resource measures which might be added to the RCS Program when the second Program Announcement is sent to customers in early 1983. DOE plans to use the criteria set forth in this notice to evaluate prospective measures. Any recommendation that a particular measure be included as an energy conservation or renewable measure should be submitted in the format explained below.

Each of the prospective measures will be evaluated by DOE for inclusion as an energy conservation or renewable resource measure in the RCS Program. It is DOE's intention to issue a Notice of Proposed Rulemaking to add those measures which are deemed acceptable by DOE. Where necessary for safety and/or effectiveness, DOE will also propose material and/or installation standards for the measures it would propose to add. After public comment, DOE intends to issue a Final Rule adding measures and any needed standards in time for the next major distribution of RCS Program Announcements in early 1983.

II. Criteria

DOE plans to utilize the following criteria when evaluating any prospective energy conservation or renewable resource measure:

(1) The measure's primary purpose should be the conservation of energy or the use of a renewable resource.

(2) The measure should have the potential to save enough energy to pay for its purchase and installation in a substantial portion of the residential buildings in at least one climate zone.

(3) Although recommendations regarding measures that provide energy savings on a regional basis are encouraged, the measure should not increase consumption of nonrenewable energy in houses in a substantial portion of the climate zone for which it is recommended.

(4) The measure should be shown to have a significant energy savings potential for the Nation if installed in houses in which it is appropriate.

(5) The measure should not involve switching from the use of one nonrenewable fuel to another.

(6) Test data or acceptable methods of calculation should be provided to

estimate the energy cost savings of the measure in individual houses.

(7) The measure should not present a significant safety, fire, or health hazard when properly installed. When current practice is not adequate to ensure the safe and effective use of the measure, the measure should be subject to industry-wide material and installation standards, or be susceptible to having standards formulated.

(8) The measure should not have an adverse environmental impact on the Nation or on the individual user when properly installed.

(9) The measure should have standards for determining its applicability in various types of residential buildings or different climate zones. That is, if the measure is not equally useful and beneficial to all houses throughout the Nation, there should be guidelines for determining when it is applicable to a particular house or in a particular locality.

(10) The measure should consist of a class of products defined by their function, such as "insulation" or "thermal doors". DOE will not consider the addition of specific products.

III. Response Procedure

All interested persons are invited to submit responses to DOE. Such correspondence should be mailed to:

Carol Snipes, Conservation and Solar Energy, Department of Energy, Mail Stop 6B-025, Room 1F-085, Docket Number CAS-RM-81-128, Forrestal Building, 1000 Independence Avenue, S.W., Washington, D.C. 20585.

Responses should be submitted in written form and should address all of the criteria listed above. In addition, a detailed description of the measure should be included explaining its design, operation, and function as an energy conservation or renewable resource measure. All costs associated with the measure should be included, in particular, the initial purchase price, the installation cost (if not installed by the homeowner), and the cost of operation per year. The potential fuel savings for a typical house for the measure should be included, as well as all assumptions used to obtain the projected savings. Any claims made by a manufacturer are best substantiated by showing the detailed calculations and assumptions, or by having documented evidence from an independent facility such as a nationally recognized laboratory.

Additional information should be included concerning the measure's use in the residential marketplace. In particular, the following information should be included: the expected life of the measure as predicted by any life-

cycle studies, the availability of any material or installation standards, the availability of any operation or installation instructions, the availability for purchase by homeowners (i.e., whether it is marketed nationwide or is a developing technology), and the availability of warranties on such products.

The RCS regulations, 10 CFR Part 456, may provide helpful examples to responders of applicability criteria and material and installation standards appropriate for RCS measures.

To assist DOE, responders also are requested to submit a summary data sheet with their response. The summary data sheet should include a brief statement on each of the following items:

- (1) The name of the measure and whether it conserves a nonrenewable energy resource or uses a renewable energy resource;
- (2) A brief description of the operation of the measure;
- (3) The cost of the measure, including the cost of installation and annual operation;
- (4) The projected fuel savings and assumptions upon which the projected fuel savings are based;
- (5) The expected life of the measure in number of years;
- (6) Any standards, proposed or finalized, for the measure or its installation, and a statement regarding availability of instructions for use or installation;
- (7) A statement regarding product availability and warranty availability; and
- (8) The name, address and phone number of the person submitting the recommendation and the person to contact for further information.

Any information or data considered by the person furnishing it to be confidential must be so identified and submitted in writing. DOE reserves the right to determine the confidential status of the information or data and to treat it according to its determination, pursuant to DOE's regulations on confidentiality (10 CFR Part 1004).

Issued in Washington, D.C., January 19, 1981.

T. E. Stelson,
Assistant Secretary, Conservation and Solar Energy.

APPENDIX A

The following list contains all of the present energy conservation and renewable resource measures incorporated in the RCS Program as published at 44 FR 64602, November 7, 1979.

Energy Conservation Measures

- (1) caulking;
- (2) weatherstripping;
- (3) furnace efficiency modifications (including replacement furnaces or boilers of the same fuel type vent dampers and automatic intermittent ignition devices on gas-fired heating systems and replacement oil burners);
- (4) replacement central air conditioners;
- (5) ceiling insulation;
- (6) wall insulation;
- (7) floor insulation;
- (8) duct insulation;
- (9) pipe insulation;
- (10) water heater insulation;
- (11) storm windows;
- (12) thermal windows;
- (13) storm or thermal doors;
- (14) heat reflective and heat absorbing window or door material;
- (15) devices associated with electric load management techniques; and
- (16) clock thermostats.

Renewable Resource Measures

- (1) solar domestic hot water heating systems;
- (2) active solar space heating systems;
- (3) combined active solar space heating and solar domestic hot water system;
- (4) passive solar space heating and cooling systems including direct gain glazing systems indirect gain systems solar/sunspace systems and window heat gain and/or less retardants;
- (5) wind energy devices; and
- (6) replacement solar swimming pool heaters.

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10 CFR Part 456

[Docket No. CAS-RM-80-123]

Residential Conservation Service Program; Federal RCS Plan

AGENCY: Department of Energy.

ACTION: Notice of amended hearing schedule and public comment period.

SUMMARY: This notice amends the hearing schedule and extends the public comment period for the proposed Federal Plan for the Residential Conservation Service Program (46 FR 2522) as published in January 9, 1981. The comment period has been extended from 45 to 60 days, and the hearings have been rescheduled for the end of February, concurrent with the public hearings on the proposed rule for the Commercial and Apartment Conservation Service (46 FR 4482).

DATES: Comments must be received by March 10, 1981, 4:30 p.m., e.s.t., to ensure

their consideration; public hearings February 19 and 20, 1981, 9:00 a.m., Washington, D.C.; February 26 and 27, 1981, 9:00 a.m., Kansas City, Missouri; requests to speak must be received before 4:30 p.m. on February 5, 1981, Washington, D.C.; and February 12, 1981 for Kansas City, Missouri.

ADDRESSES: Comments and requests to speak at the Washington hearing should be addressed to Carol A. Snipes (Hearing Procedures), U.S. Department, Office Hearings and Dockets, Mail Station 6B-025, 1000 Independence Avenue, S.W., Washington, D.C. 20585, (202-252-9319). Comments and requests to speak at the Kansas City hearing should be addressed to Dottie Doll, DOE Regional Office, Region VII, 324 11th Street, Kansas City, Missouri 64106 (816-374-5533). Washington hearing will be held in Room 2105, 2000 M Street, N.W., Washington, D.C. 20036. Kansas City hearing will be held in Room 302, Federal Office Building, 911 Walnut Street, Kansas City, Missouri 64106.

FOR FURTHER INFORMATION CONTACT:

Elizabeth Pratt, Residential Conservation Service Program, Office of Conservation and Solar Energy, Department of Energy, Room GH-068, 1000 Independence Avenue, S.W., Washington, D.C. 20585, (202) 252-1649.

Laura Rockwood, Official of General Counsel, Department of Energy, Room GB-128, 1000 Independence Avenue, S.W., Washington, D.C. 20585, (202) 252-9519.

SUPPLEMENTARY INFORMATION: Each person who, in the Department of Energy's judgment, proposes to present relevant material and information shall be selected to be heard and shall be notified of his/her participation before 4:30 p.m. on February 12 for the Washington, D.C. hearing; and before 4:30 p.m. on February 19 for the Kansas City hearing.

Issued in Washington, D.C., January 19, 1981.

T. E. Stelson,
Assistant Secretary, Conservation and Solar Energy.

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